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OCT 25 1923

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THE
MEDICAL JOURNAL OF AUSTRALIA

VOL. II.—10TH YEAR. SYDNEY: SATURDAY, SEPTEMBER 15, 1923. No. 11.

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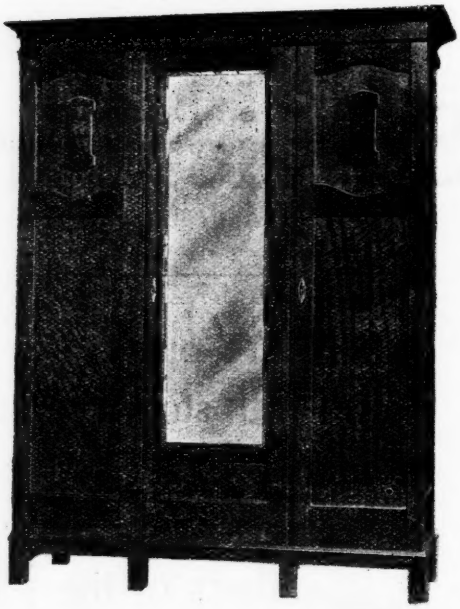

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THE MEDICAL JOURNAL OF AUSTRALIA

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THE TONSIL FROM THE POINT OF VIEW OF THE PHYSICIAN.[1]

BY C. BICKERTON BLACKBURN, O.B.E., B.A., M.D., Ch.M. (Sydney),

Honorary Physician, Royal Prince Alfred Hospital, Camperdown, Sydney.

I FEEL that I am in a position somewhat analogous to that of a jockey who, having started with the intention of occupying a position among those that also ran, finds himself to his dismay leading the field. When I yielded to the kindly importunity of the Honorary Secretary and of Dr. Vickers and agreed to contribute to this discussion, it was not even hinted that I was to open it.

The rôle of the tonsil in general disease is difficult to define and, while no one is likely to deny that organisms and their toxins can be as readily absorbed into the general circulation from sufficiently diseased tonsils as from any other focus, there is undoubtedly a very wide difference of opinion as to what is to be accepted as the standard of disease that is to justify the confiscation of these organs.

In view of the belief that the tonsils in early childhood may have an internal secretion and be possibly concerned in the developmental processes, there seems good reason to treat the peccadilloes of these glands more leniently at this period of life than later. On the other hand, the tendency shown by healthy tonsillar tissue to atrophy about the time of puberty would suggest that any hypothetical secretory activity has at any rate ceased by that time, so that we need not thereafter allow this aspect of the question to influence our treatment.

I emphasize this aspect of the question partly to explain the plan I propose to adopt of discussing the affection of the tonsils before and after puberty separately and partly to make it clear that I have read certain articles that have recently appeared in the medical press propounding the thesis that in permitting removal of the tonsils physicians are accessories to the crime of robbing these little ones of one of their most vital possessions.

The Tonsils Before Puberty.

In the first place, then, let us consider the tonsils in children up to the age of puberty. At this age we are particularly liable to encounter large, smooth, vascular glands which present little or no naked eye evidence of definite inflammation. Some of these are, I believe, simply actively functionating glands and in the absence of other evidence of ill-health I do not think they should be interfered with as a routine practice. Sometimes, however, this

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on July 20, 1923.

type becomes so large that respiration is interfered with or an irritable cough is set up at night. In such cases I have not hesitated to advise removal and so far I have not observed any untoward results. It is as well to remember that very large tonsils of similar appearance are liable to be met with in lymphatic leuchæmia, and, therefore, if there is any suspicion of anæmia or there is a concurrent general failure in health, a blood slide at least should be examined before surgical treatment is considered. In tuberculous infections of these glands also a very similar appearance may be presented and there may be little evidence of inflammation, but in these cases the cervical glands are usually early enlarged and this should excite our suspicions and lead us to call the surgeon to our assistance.

When, on the other hand, there is unquestionable evidence of inflammation, our therapeutic measures will have to be guided by the duration of the disease, the tendency to recurrence and most of all by the nature of the inflammatory process. Very frequently an attack of acute tonsillitis especially of the type seen in epidemics, though associated with very gross swelling and inflammation at the height of the attack, will subside completely and leave no evidence of permanent damage. Hence I think this complaint may be fairly claimed as in the main, non-surgical. In some cases, however, middle ear complications result or the glands, instead of returning to normal, remain large and unhealthy and the patient becomes subject to recurring attacks of inflammation of varying severity. These cases should certainly be regarded as surgical.

Apart from these frank "throat" cases we from time to time see quite young children in whom a general unsatisfactory state of health with such symptoms as anæmia, slight irregular rises in temperature, capricious appetite, fractiousness, malnutrition and failure to keep up with other children of the same age in growth and mental activity, is due to chronic septic absorption from the tonsils.

Such disease is by no means always preceded by frank tonsillitis, nor indeed in many cases by any symptoms referred to the throat and therefore the throat should always be carefully investigated in all obscure toxæmias of childhood. It may not always be easy to decide even after examination whether the throat is responsible, as a slight departure from normal might well be a result instead of the cause of the general ill-health. If, however, in such cases a close watch is kept, it will generally be found that recrudescences of the general symptoms will be associated with temporary increases in the tonsillar disorder, whether shown by increase in size or redness of the glands or the extrusion of some cheesy exudate. I can recall several children of this type in whom the removal of the tonsils has been followed by quite remarkable physical and mental improvement.

There are two general conditions in which the tonsils are especially under suspicion in childhood, and this applies to later childhood as well. I refer to acute rheumatism and nephritis.

The relationship between disease of the tonsils and acute rheumatism is a very close one. For my part I am never quite satisfied when after I have diagnosed acute rheumatism, the patient retains his tonsils and feel rather disappointed when I cannot find sufficient evidence of disease in them to justify my recommending tonsillectomy. On several occasions I have known it happen that after a relapse of the rheumatism tonsils seemingly healthy in the first attack have shown quite obvious disease and after their removal the rheumatic process has come to an end. I perhaps ought to make it clear that when I speak of acute rheumatism in this relationship, I am not, of course, referring merely to the articular form but include cardiac manifestations and chorea. I can call to mind numbers of patients who, first coming under notice with a long history of recurring attacks of acute rheumatism—with often, unfortunately, badly damaged hearts—have now been quite free from attacks for years after the complete removal of diseased tonsils. I lay stress upon the word "complete" as I am sure that in no other condition is it so essential that every part of the tonsils should be excised. I have seen some cases in which an incomplete removal has been followed by a relapse of the disease and a second operation been followed by permanent cessation of the attacks.

In case I may be misunderstood, I should like to add that I regard the tonsil as a very frequent but not the only breeding ground of the organisms responsible for acute rheumatism and further that I have both treated cases of this disease in which the tonsils have remained healthy throughout, and also that I have seen others in which no improvement in the general symptoms has followed the removal of extremely diseased tonsils.

Nephritis in children is also in my experience very often associated with tonsillar infections. I am not so much thinking of the acute fulminating forms such as we find in scarlet fever, though it is worth noting that in this disease these glands are always greatly inflamed. The type to which I particularly refer, is that subacute variety in which a routine examination of the urine of a child brought for examination on account of symptoms of general debility reveal a moderate to heavy cloud of albumin with granular and epithelial casts. I have seen many such cases in which the urine has quite cleared up after the removal of diseased tonsils. I well remember one of my earliest experiences of this type of case when I was consulted by a distracted widower with two little girls, nine and eleven years of age. He had attempted to insure their lives and both had been refused for kidney disease. The urine of each showed much albumin and many casts and both had huge, unhealthy tonsils. Within a few weeks of tonsillectomy each urine was quite clear. Some years later I had an opportunity of examining the children, then approaching adult life, and they were perfectly healthy and their urine was quite normal.

Apart from cases of definite nephritis, I have notes of some patients in whom the condition seemed to

come more under the heading of what is known as orthostatic albuminuria—patients whose urine was practically normal on rising, but later in the day, presented a heavy cloud of albumin but rarely more than an odd cast—in which the removal of diseased tonsils has been followed by disappearance of the albumin. These patients have, however, been usually rather older than the type we have been discussing.

The Tonsils After Puberty.

After the age of fourteen or fifteen I think that if the tonsils are definite "entities" they are probably unhealthy and therefore to be eyed with suspicion when any disease is present that may possibly be attributed to them. At the same time I do not wish it to be inferred that I suggest that we are to advise lightly surgical treatment in every one whose tonsils are not normal. Unfortunately we must never forget that, however slight the surgical risk, it is there and that disasters do occasionally occur. Perhaps the expert will tell us that in experienced hands the risk is negligible, but we cannot forget that it takes experience to make an expert.

But if the tonsils are quite obviously diseased, I consider that they are such a definite source of danger that generally speaking they ought to be removed. Not all such tonsils are large and I have several times seen patients in whom there was practically nothing abnormal to be seen on a casual glance at the throat, but when the faucial pillars were drawn aside, deep crypts filled with purulent material often very offensive could be demonstrated. Sometimes we find such a condition in those who come in apparently good general health and complaining only of frequent sore throats, offensive breath or the much dreaded "catarrh"; but often enough we have good reason to correlate the state of the throat with some serious general disorder.

Two years ago, I saw a young lady who had been laid up for twelve months with a dilated heart and had apparently been led to believe that she was destined to permanent invalidism. Her heart was quite definitely dilated and flabby, but she had a slight evening rise of temperature and her tonsils were extremely diseased and on removal were found to be practically pus sacs. She made rapid progress after operation and a year later wrote to me that she was quite restored to health. Many other conditions will occur to you in which speedy improvement in the general symptoms frequently follows promptly upon tonsillectomy. This is particularly the case in some cases of recurring fibrositis and certain early types of *arthritis deformans*.

Apart from such pathological conditions as these in which a more or less definite relationship between the general symptoms and the tonsil can be established, it is well to remember that in many of the more slowly developing chronic diseases to which so many succumb in later life, such as chronic nephritis, arterio-sclerosis, *diabetes mellitus*, the essential lesion is a chronic inflammatory one.

Till we are able to say that the underlying toxic agent in these diseases arises from some other definite source, it is surely a wise policy to eliminate chronic sepsis as soon as possible whenever and wherever we find it. I hope that some day some really efficient medical means will be discovered with which we can restore chronically infected tonsils to a healthy condition, but till then I think the physicians should in all such cases call the surgeon to his assistance.

THE TREATMENT OF TONSILS AND ADENOIDS.[1]

BY W. C. MANSFIELD, M.B., Ch.M. (Sydney), F.R.C.S. (Edinburgh),
Honorary Surgeon for Diseases of the Ear, Nose and Throat, Royal Prince Alfred Hospital, Camperdown, Sydney.

THE treatment of tonsils consists in the palliative or local and the radical or operative forms. I intend tonight to deal exclusively with the radical or operative treatment. The former you are well acquainted with and the latter I propose to discuss.

Adenoids.

If masses of adenoid tissue are large, they should be removed at once. It is well, however, to remember that if the patient shows any signs of the presence of inflammatory trouble, operation had better be postponed until the inflammation has subsided. Small areas of adenoid tissue in the choanæ need not be removed in every instance. It generally happens in elder children that if these areas are not causing symptoms, they will atrophy.

In regard to the method of removal the operator should keep in the middle line. He should investigate carefully the areas high up in the choanæ, behind the cushions of the Eustachian tubes and in Rosenmüller's fossa. Careful attention should be given to the after treatment.

Tonsils.

In dealing with the operative treatment of the tonsils the question of anæsthesia is of the utmost importance. The use of a general anæsthetic is most satisfactory and of the methods of administration the intra-tracheal or the intra-pharyngeal are to be preferred. If local anæsthesia is used, "Anestiform" will be found to yield the best results.

In regard to the operation itself two main methods are in use. There is the guillotine method and this includes that known as the "Sluder" method. There is also the method of dissection or enucleation. The old guillotine method is practically discarded. The "Sluder" method is a modified guillotine method and can only be used in selected instances. The flat, buried tonsils cannot be removed by the "Sluder" method. I should mention the fact that some perfect enucleation operations can be performed by means of the snare combined with the vulsellum. In contrast with the "Sluder" operation the operation by enucleation can be performed on any tonsil and is the means most generally adopted.

In performing the operation of enucleation the mouth is gagged open, the tongue is held well down at its base with a depressor and the tonsil gripped

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on July 20, 1923.

with a vulsellum. By traction towards the middle line the tonsil is partly pulled out from its bed and the mucosa behind the anterior pillar is brought into view. Through this a vertical incision is made, thus avoiding injury to the anterior pillar itself which is most important as thereby cicatricial contraction and deformity are avoided. Some surgeons commence by freeing the posterior pillar and working upwards and forwards ligating the vessels as the tonsillar capsule is exposed.

It must be borne in mind that the capsule is very superficial and unless care be exercised, the incision can easily be carried through this and a clean separation is then out of the question.

After exposure of the capsule a separator is used and the areolar tissue between the capsule and the aponeurosis of the superior constrictor muscle of the pharynx is carefully cleared away from the capsule. Then the incision should be carried in a curved direction over the superior pole of the tonsil still avoiding injury to the pillars and finally downwards thus freeing the tonsil with its capsule from the posterior pillar. The tonsil is thus free except for its attachment lower down on its outer aspect. A little further manipulation with the separator will free these. The snare is applied and working it carefully down all the tonsil is included. On force being applied the tonsillar base is crushed and the tonsil separated.

Throughout the operation of enucleation great care must be taken not to injure the pillars of the fauces. As soon as the tonsil has been removed, a swab should be quickly applied. No styptics are necessary. After a couple of minutes the swab should be removed and bleeding points sought and picked up. Hæmorrhage is most usually caused by injury to one of the veins of the tonsillar plexus on the posterior wall. This will almost always require a ligature. All large vessels should be ligated. Smaller vessels often stop bleeding after forcipressure has been applied for a few minutes. After operation the site of removal should be swabbed with *tinctura bezoini composita*. This has anæsthetic properties and in addition gives the raw surface a protective covering. In 99% of cases if the patient leaves the table with a dry throat, no secondary hæmorrhage occurs. After treatment is carried out with the patient in bed.

The blood supply of the tonsil comes chiefly from the tonsillar branch of the facial artery which in turn arises from the external carotid artery. The outer surface of the capsule is supplied from this source. The lower part of the gland may be supplied by a branch from the lingual artery. Sometimes this branch arises from the *dorsalis linguæ* branch of the artery and sometimes from the main lingual trunk. The upper and posterior part of the tonsil sometimes derives its supply from the palatine branch of the ascending pharyngeal artery. The internal maxillary artery also contributes blood to the tonsil through a small branch coming from its posterior or descending palatine branch. Ossasionally a plexus of arteries is formed in the outer layers of the capsule by the anastomoses of the supplying blood vessels.

INDICATIONS FOR THE TREATMENT OF TONSILS AND ADENOIDS.[1]

By WILFRED VICKERS, M.B., Ch.M. (Sydney),
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THE part played by the tonsils in health and disease has been the subject of much discussion and the pendulum has swung from extreme conservatism, on the one hand, to what can only be called wholesale slaughter of the tonsils on the other. As regards function, the tonsil is, probably, to some extent an advance guard against infection of the respiratory and alimentary tracts. Some authorities hold that the bacteria found in the tonsils are in the stage of ingestion and destruction. Undoubtedly the task often becomes too much for the tonsil and it becomes infected by bacterial invasion from the crypts. The blocking of the mouths of the crypts by bacterial products leads to further damage and inflammation. Logan Turner believes that the tonsils are both a protection and a menace. Undoubtedly a large ingestion of bacteria is constantly going on through the tonsils, probably leading to an immunization of the body against this invasion. Removal of the tonsils might thus diminish the resistance of the body to general infection. On the other hand, there is abundant evidence that the tonsils constitute one of the portals of entry of systemic infection and, in addition, they do themselves become the seat of disease. Weller found in the course of examination of nine thousands tonsils that there was evidence of active tuberculosis in 2.3% (*Archives of Internal Medicine*, June, 1921, page 631). Poynton and Payne obtained from the tonsils the coccus that they found in rheumatic joints and rheumatic heart lesions. Kaiser in *The Journal of the American Medical Association*, June 17, 1922, classified five thousand cases of tonsillectomy into three groups: (i.) Tonsils enlarged with clinical evidence of infection; (ii.) tonsils enlarged with no evidence of infection; (iii.) tonsils not enlarged with evidence of infection. The patients were examined one year after operation. Most improvement was found in those whose tonsils had shown enlargement and infection. A considerable improvement was found in those patients whose tonsils showed evidence of infection with no enlargement. Those patients with tonsillar enlargement and no infection showed no obvious improvement in general health. Singleton reported a study of fifty-two patients from the standpoint of the number of professional visits which had to be paid to children before and after operation. In half the patients no subsequent visits were required, though previously he had been seeing the children at frequent intervals. Wakley and Pratt (*Laryngoscope*, February 18, 1922) investigated the after condition of nine hundred and twenty-six patients after removal of tonsils and adenoids. They found that acute infection of the upper respiratory tract and middle ear was much less frequent. They also concluded that the results

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on July 20, 1923.

in rheumatism, though not uniformly successful, justified the operation and that it was justified in patients suffering from cardiac or renal conditions if carefully selected. Osler and McCrae state that in cases of arthritis "the mouth and throat take first place as a focus of infection." Lillie and Lyons, working at the Mayo Clinic, say: "That the tonsil is a focus of infection in cases of myositis and arthritis is common knowledge and will not be discussed." In this report they found 81% of patients improved as the result of tonsillectomy. Pilot and Davis found that 97% of tonsils contained the *Streptococcus hæmolyticus* in their crypts and that in 60% of the patients the same organism was present in the pharynx. After efficient removal only 15% showed the streptococcus in the pharynx.

From my own experience at the Out-Patients' Department at the Royal Alexandra Hospital for Children, I am convinced that a very large number of children are immensely improved by removal of tonsils and adenoids in properly selected cases. There is thus a large amount of clinical evidence in favour of the theory that these structures are a great menace to health.

On the other side of the picture we have the evidence of the ingestion of bacteria by the tonsils, in this way, probably, helping to establish an immunity against attack. After due consideration of these facts it follows that we must carefully weigh all the evidence for and against removal in each particular instance and decide whether the harm that is being done, is greater than any possible good that might accrue.

Before passing to deal in detail with the indications for treatment I would like to say that my own experience suggests that we should divide the patients into two age groups as far as tonsils are concerned.

Below the age of five I think we should be extremely conservative in their removal. Under that age, as a rule, the indications for treatment are not often very well marked and perhaps the immunizing process is going on. Above that age, as a rule, the advantages of treatment far outweigh any possible disadvantages. I have never yet seen a patient that was the worse for having had the tonsils enucleated and I have seen a very large number immensely improved. Severe hæmorrhage after complete enucleation is rare and death from anæsthetic poisoning so infrequent that not one single case has occurred in the Out-Patient Department of the Royal Alexandra Hospital for Children in the past fifteen years.

In considering the indications for treatment, I wish to deal with the subject under two headings, namely the mechanical effect by obstruction to respiration and the effect on the body of absorption of toxins.

The Mechanical Effect by Obstruction to Respiration.

In dealing with the mechanical effects, I wish to separate tonsils from adenoids and to say in a general way that when adenoids are present causing any symptoms of obstruction, they should be removed without any delay by curetting the posterior nares no matter what the age. I do not think that there is one valid argument against this treatment and I almost go so far as to agree with one authority who used to teach that in case of doubt the best way to diagnose adenoids is with the adenoid curette.

Among the symptoms of obstruction I would mention the following: Mouth-breathing, snoring and restlessness at night, constant colds, poor development of the chest such as presence of Harrison's sulcus, general malnutrition, difficulty in taking breast milk *et cetera*. Sometimes these symptoms arise early in life. A child that has its posterior nares blocked by adenoids, cannot get a proper supply of air without breathing through the mouth. It thus loses the protective value of the nose as a filter. Also want of proper supply of air leads to poor development and general malnutrition *et cetera*. If mouth breathing should persist for years, it becomes a habit from which it is very difficult to break the child. The indication is to remove the adenoids as soon as they show signs of their presence and to see that the child is taught to breathe properly in order to avoid their recurrence. Should the mouth-breathing habit persist, the passage which is not being used, will probably again become filled up with adenoid growth. Many men have had to face the disappointment of parents at the recurrence of adenoids through neglect of the simple precaution of teaching the child to breathe properly.

With regard to the tonsils we should be much more conservative. Tonsils should never be removed merely because they are enlarged. If the hypertrophy is excessive, we will usually find signs of infection also. Most of the patients showing the results only of obstruction to respiration will be found to have adenoids and the removal of these structures will usually cure the condition and also cause a shrinkage of the tonsils.

In this connexion I would again recall the findings of Kaiser that patients whose tonsils were removed for enlargement only, showed no obvious improvement in general health.

The Effect of the Body of Absorption of Toxins.

Under the heading of infection or infection combined with obstruction we have a large group of cases producing a fairly typical picture. The pale, puny, undersized child with a half-stupid look, with the "pinched in" nose, the heavy or snoring breathing, the nasal voice, the stooping shoulders with the head poked forward and the contracted, so-called funnel-shaped chest with its depressed lower end of the sternum and often transverse constriction below the nipples is well known and easily recognized. This child gets frequent coughs, colds or sore throats leading to deafness. This is at first only complained of when the child has a cold; later it becomes persistent and there is frequent mucopurulent discharge from the nostrils and perhaps epistaxis. The irritation of the catarrh may lead to vomiting, asthma *et cetera*.

Upon examination we will usually find either a large tonsil bulging well into the fauces or a de-

pressed tonsil with muco-purulent material oozing from the crypts. Every now and then the child gets a sore throat when the tonsil will be found to swell. The cervical lymph glands will probably enlarge and from the continued infection will remain in a state of chronic inflammation or break down and form abscesses. The infection may spread to the peritonsillar tissue causing an abscess. A spread along the Eustachian tube may lead to acute *otitis media* which may cause damage to the tympanum and chronic otorrhœa or mastoid disease. A spread of the infection may cause pneumonia or other acute infective conditions.

One case in illustration of this point is worth quoting. A boy of seven had had repeated attacks of tonsillitis. When I first saw him he had acute *otitis media* with blood-stained discharge from one ear. His tonsils were acutely inflamed and oozing freely, but were not very large. He continued to have pyrexia and later developed pneumonia followed by an empyema of the pleural cavity, the pus from which yielded streptococci in pure culture. Three months later I enucleated the tonsils which belonged to the small, septic, embedded type.

There is another type of case that is sometimes rather puzzling. A child will get recurring attacks of fever up to 38.4° or 38.9° C. (101° or 102° F.). He will complain of headache and general lassitude. The attacks will last a few days and pass off; no complaint is made of sore throat, though usually the cervical glands become tender and remain enlarged.

If the throat be examined carefully, a small embedded tonsil will be found from which pus can be squeezed. These tonsils are bound down to a considerable degree, so that they never become obviously enlarged and on this account are frequently passed over as a cause of disease. Some of the tonsils that have been subjected to tonsillectomy, have developed into this class. The crypts have been cut across, the mouth of the crypt has become narrowed and unable to discharge freely and the crypts have become so many fistulæ unable properly to empty themselves, thus leading to chronic absorption. G. E. Waugh, in reporting his first nine hundred cases on tonsillectomy, included no less than one hundred and forty-seven in which tonsillotomy had previously been performed.

In regard to diphtheria carriers Tilley advises enucleation of tonsils when simpler measures such as douching, painting and so forth have failed.

The following list of systemic diseases is given by Pavey-Smith in *The Practitioner* (April, 1922) as being due to tonsillar infection: Acute and chronic arthritis including rheumatic fever and infective arthritis, endocarditis simple and malignant, pericarditis, chorea, myositis and fibrositis, nephritis, toxic neuritis, osteo-myelitis, appendicitis, pneumococcal peritonitis, infective jaundice, pulmonary gangrene, pulmonary tuberculosis, cervical adenitis simple and tuberculous, septicæmia, arteriosclerosis, general debility.

Regarding acute rheumatism so many excellent results have been reported, that tonsillectomy should be done in all cases when the condition becomes quiescent. In some of the patients with osteomyelitis that I have seen, the tonsil was the only pathological structure that could be found and was probably the portal of entry of the infection. The other diseases have been dealt with in a previous paper.

I would like to refer shortly to infections of the supra-tonsillar fossa of His. Blockage of the outlet of this fossa leads to inflammation of the tonsil with its attendant sequelæ and demands treatment.

Summary.

Shortly then, the indications for treatment are as follows:

(i.) For the removal of post-nasal adenoids only—mouth breathing, snoring, frequent colds, the presence of Harrison's sulcus *et cetera*, where there is no evidence of infection.

(ii.) For the removal of tonsils and adenoids—chronically enlarged cervical glands, including tuberculous glands, *otitis media* and mastoid disease, repeated attacks of tonsillitis, quinsy *et cetera*, systemic disease such as acute rheumatism *et cetera*, pyrexia, associated with small septic tonsils, diphtheria carrier state, recurrent attacks of asthma and new growth.

In all these cases treatment is demanded and the only treatment that is of any use, is a complete removal of tonsils and adenoids.

Conclusion.

I think I have brought sufficient evidence to convict the tonsil on numerous counts. Pavey-Smith puts the case very well, when he says "that the crypt débris is a good culture medium, the tonsil an efficient incubator and the presence of certain bacteria complete a laboratory sufficiently near the blood stream to make a systemic disease possible."

OBSERVATIONS ON MONGOLIAN IDIOCY.[1]

BY W. A. T. LIND, M.B., B.S.,
Pathologist, Victorian Lunacy Department.

THE divergence of reputable opinions upon the ætiology and even clinical description of Mongolian idiocy prompts me to submit what "home grown" evidence I have at my disposal, to see if in conjunction with your added remarks it will shed any further light upon the subject. When examining "home grown" evidence we know the conditions under which the worker arrived at his conclusions. When reading published accounts from abroad we find a confusing difference of opinion which could be possible only if the conditions governing the investigations varied in some way. As an example of this difference we find Ireland, Barr and others of similar large experience describing Mongolian idiocy as a definite type of idiocy and men like Church and Peterson saying: "I have never been

[1] Read at a meeting of the Section of Psychiatry and Neurology of the Victorian Branch of the British Medical Association on August 20, 1923.

able to convince myself that such a distinction as Mongolian idiocy has any justification whatever."

The information submitted by me this evening has been obtained from the Cottages at Kew and from *post mortem* examination made by myself during the last decade. I want to emphasize that in my opinion the last word on the subject will not have been said until the "mongols" not segregated in institutions are also included in a general investigation. My reason for this precaution is that those not segregated are of higher grade than those in institutions and it is quite possible that an investigator working with one class may arrive at different conclusions from the investigator working with the other class. The reason for sending a mongol to an institution, such as the Kew Cottages, apart from the fact that there is nowhere else to send him, is because of poverty and difficulty in looking after him at home. This means also that he is of low grade and unemployable. As you may imagine, if he could have been of any possible use at home or if his parents had means, he would not have been sent to a public institution. All this affects the results obtained by investigators, such as in regard to the size of the family and the position of the patient in the family, for as you know it has recently been impressed upon us that "the rich get rich and the poor get children." Barr may have been working with the well-to-do or in a district where the size of the family is small, while Shuttleworth may have obtained his results from the population of a segregation colony or it may be that the reverse is the case. Whichever it is, we do not know and that is why our "home grown" evidence is so valuable.

Physical Characteristics of Mongolian Idiots.

An observant student on the occasion of his visit to an institution for the segregation of certified congenital mental defectives will notice that there is a class of patients who all look like members of the same family in regard to physical features. If he has been fortunate in his visits to the out-patient department of a children's hospital, he will recognize them as Mongolian, Kalmuck or Tartar idiots, so called from the shape of the face produced by the superior epicanthal fold sloping down towards the nose. This is due to the unusual depression of the glabella and the result is the upward and outward sloping of the palpebral fissure, so familiarly recognized as the distinctive facies of the Chinaman. It is better not to call the patients Mongolian idiots in the presence of the friends, as unfortunate deductions have been made by the unenlightened to the disadvantage of the unfortunate mother of the patient. The external appearances of a mongol idiot are numerous, but all mentioned are not usually found together.

The head is small, the glabella depressed; there is a high cephalic index and a shorn-off appearance of the occipital region.

The face is flat and red, the bridge of the nose depressed, the nose short and looking forwards, the ears small and rounded, the eyes wide spread; there is epicanthus and chronic disease of the eyelids, cornea and eye muscles.

The hands are broad and stumpy with thick digits; the thumb and little finger are short, the latter abnormally curved. The feet are broad, the second toe relatively too long and the toes are webbed.

The skin is wrinkled and red and coarse. The tongue is fissured and enlarged.

There is a large abdomen, a deformity of the chest, knees and feet, a tendency to hernia.

The most frequently observed signs are those of the tongue, eyes, hands and head.

Mentally the patients are educable up to a certain standard of usefulness in proportion to the degree of deficiency present. As a rule those who are found in Kew, are very mentally deficient and consequently incapable of being educated to be of any use in helping with the work. The best that can be attained, is teaching them to keep themselves clean. The higher grades are good tempered as a rule and given to imitativeness. They represent about 3% of the population of the Kew Cottages for congenital insane and the numbers are about equal for the sexes. The degree of mental deficiency varies from idiocy to a degree of high grade imbecility and the expectancy of life is said to be inversely proportionate to the degree of deficiency present. This last statement may be correct for Mongolian idiots are a whole, but the following table will show that for the class of Mongolian that is sent to the Kew Cottages it is not a reliable guide.

TABLE I.

Age at Death. Years.	Sex.	Mental Condition.
5	Male	Low grade
7	Female	Low grade
8	Female	Very low grade
14	Male	Medium grade
14	Male	Low grade
17	Female	High grade
19	Female	High grade
19	Male	Medium grade
22	Male	High grade
27	Male	Very low grade
31	Male	Low grade
37	Female	Low grade
39	Male	Medium grade
53	Male	Very low grade

Two factors must be taken into consideration in regard to this list. The first is that a low grade patient is more likely to live longer in what is practically a hospital than in the outside world. The second is that subjects of the higher grade of Mongolian imbecility are not sent to the Kew Cottages, but are kept at home where they are easily controlled and taught to do domestic duties of a minor nature.

Mongols differ from the general run of idiots in being singularly free from epilepsy, although it is stated that if put amongst epileptics their imitative-

ness may cause them to simulate epileptic fits. At Kew they appear to be free from epilepsy, although 45% of the other types of congenital mental defectives there segregated are or at one time have been epileptics. As I have already mentioned in a contribution to THE MEDICAL JOURNAL OF AUSTRALIA,[1] "most of the macroscopical and microscopical examination of clinical varieties of insanity appears to have been restricted to the central nervous system and the importance of obtaining a record of the changes in the other parts of the body in similar types of insanity has been overlooked." With the exception of hinting at the want of efficiency in the functioning of the endocrine system, this appears to be the case also in determining the pathology of mongolism. Observers appear to overlook the fact that the change in the brain of the mongol is only part of the change in the whole body, because there is no mention of the changes found in the other organs, not even a synopsis of the causes of death. As the development of the convolutions and sulci does not begin in the fœtus till the end of the fifth month and the finger nails are already visible at the end of the third month, it follows, contrary to what some believe, that the defects in the brain of the mongol are not the cause of the changes in the other parts of the body, but part of the same disease, although the mental symptoms are due to the defective structure of the brain, just as is the case in other congenital metal deficients. The cause of mongolism is the factor or association of factors which caused the changes both in the brain and body of the Mongolian idiot. The external changes have already been mentioned. The internal changes are bunty shape of the brain, in keeping with the external appearance of the skull, and abnormality of convolution pattern. Microscopically there are no changes peculiar to Mongolian idiocy. In the *post mortem* examinations at Kew, fourteen in number, sclerosis of kidneys, liver and spleen similar to what is found in *post mortem* examinations on definitely proved syphilitic infants was found in twelve subjects. One was so matted with tuberculous caseation that the abdominal organs were practically unrecognizable from the caseous mass and one was definitely non-syphilitic, but as the clinical notes of this patient have disappeared, the diagnosis of mongolism without syphilitic changes *post mortem* must stand uninvestigated. Seven showed atrophy of the thyreoid gland, but this is frequently found to be the case in other types of congenital mental deficiency.

The Causation of Mongolian Idiocy.

There are several theories as to the causation of Mongolian idiocy; the one most popular is that the mongol is "the product of exhaustion of the reproductive function, due to too frequent child bearing." What is meant by exhaustion of the reproductive function? Middlemiss and Shuttleworth use the term, but what does it mean? If it means that frequent conceptions impair the ability of a normal woman to give birth to a normal child, then the idea is wrong and has no parallelism in the whole of medicine. Neither does age in a primapara cause anxiety to the accoucheur other than that associated with the rigidity of the maternal parts, while age in a multipara causes no anxiety at all, provided there is no other physioal illness present. The nearest approach to impairment of maternal strength gives the opposite picture in regard to the position taken by the morbid member of a family. Karl Pearson found that it is the earlier born in tuberculous families who tend to inherit the disease, and the same in syphilis. If exhaustion of the reproductive function implies that physical disease in the mother is a factor in the production of mongolism, then there seems to be some evidence in favour of it, only the reason is not necessarily connected with the frequency of conceptions. Physical illness in the mother will affect that conception in the family when the physical illness of the mother is at its greatest intensity. For example, if the mother is diseased before the first child is conceived, the first conception suffers just as Karl Pearson showed in regard to tuberculosis. But if the woman's health becomes impaired later on, then the greatest intensity of her ill-health will tend to be marked by miscarriages or abnormalities. The ætiology of abortions and miscarriages as given in the text-books on midwifery is similar to this and miscarriages appear with unusual frequency in the mongol as well as other congenital mental defective families. According to the Kew series the inheritance of a phyletic degeneration is also present, but as is the case in the charts of other congenital mental defectives Mendelian proportions cannot be demonstrated because fertilization is artificial.

Malformations.

A mongol possesses definite malformations.

In the ætiology of malformations there are three theories (Brooks's "Pathology").

In the first or pathological hypothesis the pathological processes in the embryo are supposed to give rise to malformations.

In the second or embryological hypothesis all manifestation are to be considered as the result of arrest of development of the embryo.

In the third or mechanical hypothesis mechanical efforts such as traction, pressure *et cetera* on the embryo are assumed to be the cause.

Mongolism appears to be pathological in origin. Other abnormalities, such as syndactylism, are also malformations and are transmitted in Mendelian proportion, but in the inheritance of insanity and idiocy the tendency appears to be latent until a stress, such as physical illness, determines the occurrence of a mental deficient. Physical illness does not follow the law of Mendelian proportion, so the production of Mongolian and other types of idiocy is sporadic. Middlemiss favours the exhaustion of the reproductive function theory[2] on the grounds that five out of his eight patients were the last born. Eight patients appear a small number upon which to come to this conclusion, especially as the sizes of the families are not given. Some of the Kew patients were the first born, but the majority were the last and second last in the family. As the Kew patients were not members of large

families, there may be another reason for the ultimate and penultimate members of the families being most frequently the mongols. Let me suggest a reason for this. If a Mongolian idiot is born, the parents may be so upset that they decide upon having no more children for fear of a repetition. In some cases the wife is already pregnant again before the parents have noticed that the child is abnormal, but as soon as they find this out, they decide not to risk any more idiot production. This may account for the number of these children at the end of a family. If there was a mongol in my family you could look for it at the end, as I would make it the end. In the case of parents who have scruples against contraceptive measures or of those who would not be deterred from having children, if each were a monster, the mongol will appear in the family where the determining factor, such as the physical ill-health of the mother and the inherited predisposition, have the greatest intensity. As Karl Pearson says, this is in the early members of a family if the mother is pathological before marriage.

In the Kew series information was available in regard to eighteen patients and the results were:

Table II.

Position in Family.	Number.	Number of Conceptions in each Family.
First	5	5, 2, 4, 4; 3
Fifth	1	9
Penultimate	7	3, 5, 5, 6, 9, 12, 13
Last	5	5, 11, 6, 4, 13

These families do not exceed in numbers the families found in country districts where the mother "comes in" every two years as regularly as the cows she milks and does her work from dawn till dark without paid help, till at thirty-five she shows every evidence of wear and tear, but no mongolism in the family. It will be shown later that the children born after the mongol do not show any sign of mongolism which one would expect to be the case if mongolism were due to a progressing failing power implied by "the product of too frequent pregnancy and so-called exhaustion of the reproductive function." In a contribution to The Medical Journal of Australia[3] on the ætiology of congenital mental deficiency I showed that investigation at the Kew Cottages proved that the first born was the most likely member of a family to be congenitally insane. Vercoe[4] has drawn up an interesting table showing a comparison between the first, second, third, up to the eighth child in the family as regards their relative intelligence, physique and resistance. His conclusions are that the quality of the average child does not deteriorate in any way with successive pregnancies; that the quality of the family does not deteriorate in any way with the increase in quantity, in the environment and class which he has considered (public elementary schools), since the eighth children drawn entirely from large families are inferior to none and superior to the eldest which are drawn largely from small families. The figures which he gives, indicate in his opinion that in intelligence, height and weight there is no appreciable difference between any of the children, whereas in incidence of disease, both past and present, the worst child is definitely the eldest and the best is definitely the eighth and onwards. Families of less than four children were excluded in the hope of avoiding possible fallacies arising from excessive incidence of disease or from artificial restriction.

According to Vercoe and to the independent investigation made at Kew in 1916 it would appear, if the condition is due to maternal defect, that because two-thirds of the mongols came either last or second last in the family, the health of the mother must have become impaired subsequent to marriage, otherwise the earlier born would have been mongols, but this is negatived by the fact that the mongols are followed in the family by normal healthy members. Were it not for this negation mongolism might be explained as being due to an unknown impairment in the mother which, when present before marriage, produced a mongol as the first born, and which when developed later on in life, produced a mongol which was the last or second last by deliberate intent of the parents.

Barr discredits the theory that the mongols are the last born and that old age of the parents is an ætiological factor in their production. He cannot find sufficient data to assign any definite cause. Stoeltzner, of Halle,[5] suggests hypothyreoidism in the mother as a cause, on the grounds that he found three cases out of ten where the mother showed hypothyreoidism. The conclusions arrived at upon such slender evidence are obviously unjustifiable. We tend nowadays to blame the endocrines for whatever we cannot explain otherwise and if my own experience in the *post mortem* room is any guide, the thing is overdone. I have found the *sella turcica* practically empty, so far as pituitary substance is concerned, in persons with different mental and physical symptoms on the same day and with none of the symptoms which are supposed to be caused by atrophy of the pituitary. This is not to say that I deny the internal secretion of the pituitary, but that the manner in which it produces disease is not finalized. The same in regard to alteration of the *sella turcica* in epilepsy. Although I have seen radiograms of epileptics depicting alteration of the *sella turcica*, they have all been walking about, but those which I have examined *post mortem*, all failed to exhibit anything to account for the appearances shown in radiograms.

My own experience is that one never sees more than one mongol in a family chart, and Mr. Rae, the head attendant of the Cottages at Kew for twenty-seven years, supports this statement. On the other hand cretinism which according to McCarrison is nearly always associated with goître in the mother, may occur more than once in the family. If mongolism were due to maternal hypothyreoidism, could not we reasonably expect more than one

mongol in a family? The many irregularities which accompany human reproduction, hinder the determining of the actual proportion of inheritance as Mendel did in the case of the crossing of varieties of peas and as others have done with the different varieties of fowls. Even taking this hindrance into account, mongolism differs from other types of abnormalities and congenital mental deficiencies which in contrast with mongolism show others in the family affected.

In drawing up the heredity charts in connexion with this series of cases at Kew, we have followed our usual custom of including every conception, whether it ended in abortion or otherwise. We still realize that even with that precaution, we miss very early conceptions, but as we always follow this rule the conditions are the same in regard to the other types of mental abnormality with which we contrast mongolism.

Support to mongolism being due to defect in the endocrines as suggested by Middlemiss[5] is found in the similarity to the types of physical abnormalities exhibited in cretinism, achondroplasia and acromegaly, which conditions are now accepted as being due to disease of endocrines. Sherlock considers that in certain cases when the symptoms of cretinism clear up under treatment, there seems to be a degree of mongolism left, as if the two conditions were combined.

The explanation of mongolism by Shuttleworth[6] is that mongols are exhaustion products due to conditions adversely affecting maternal reproductive powers, such as advanced age of the mother and frequent child-bearing. It will be seen by the following table (III.) that advanced age of the mother and frequency of conception do not appear more often than in the general run of population and certainly not more often than in families with phyletic degeneration who reproduce extensively. As the proportion of mongols in the Kew Cottages is only 3% of the number of degenerates housed there, it certainly looks as if this suggested factor is incorrect. Again, is it proved that pregnancy is harmful to the normal woman? Personal observation convinces me that in the woman not affected by some handicapping disease pregnancy is beneficial. Insufficient rest after confinement and too early return to housework with its accompanying troubles are the reasons for women looking prematurely aged. It is for this that pregnancy is so unjustly blamed.

Other suggestions in regard to the cause of mongolism are depressing toxic influences such as alcohol, syphilis, tuberculosis and neuropathic heredity.[7] These are common to all types of congenital mental deficiency, so that by themselves they cannot be regarded as the cause of mongolism otherwise they would have produced more than 3% mongols at Kew.

TABLE III.

Conceptions in Family.	Rate of Conceptions up till Birth of Patient.	Position of Patient.	Age of Mother at Patient's Birth.	Concerning Remaining Conceptions.
13	Twelve in sixteen years ..	Twelfth conception ..	44	One died, aged nine months, one died fifteen months. The last was normal.
5	Four in six years	Fourth conception ..	37	Son by husband's former wife insane. The fifth conception normal.
2	First child	First conception ..	21	Second child normal.
6	Unknown	Fifth conception.. ..	36	The sixth child normal.
4	First child	First conception ..	20	The second and third normal, the fourth a miscarriage.
13	Only child by mother's second marriage. There were twelve conceptions by first marriage	Thirteenth conception	47	Six died in infancy, one set of twins, one epileptic, two miscarriages, five normal.
12	Eleven in twenty-two years	Eleventh conception ..	39	The twelfth child normal.
6	Six in ten years	Sixth conception ..	34	The fourth conception died just after birth.
3	First conception	First conception ..	21	Other children normal.
9	Five in seven years	Fifth conception ..	25	The fourth and eighth were miscarriages, the others normal.
4	First child	First conception ..	30	Others normal.
5	Unknown	Fifth conception ..	41	Others normal.
9	Eight in twelve years ..	Eighth conception ..	40	The ninth conception died aged three months, others normal.

Holt[8] says: "Little is known of the pathogenesis of this condition, but in many cases there are syphilitic antecedents." As mentioned before, in twelve patients out of fourteen examined *post mortem* at Kew changes like syphilis were found. Stevens[9] in a series of twenty-one Mongolian idiots obtained a Wassermann reaction in the blood serum of 10%, and in the cerebro-spinal fluid of 25%. In the same series the globulin was increased in 90% of the patients. Only six of the Kew patients have been examined by the Wassermann test and only one gave a positive result. In congenital syphilis the result of the Wassermann test is uncertain after the age of puberty and all the Kew patients were over the age of sixteen. This peculiarity of the Wassermann test in congenital syphilis was first mentioned by H. R. Dean[10] and subsequently confirmed by others. Syphilis is very common in the inmates of the Cottages at Kew, yet only 3% are "mongols." Just as in general paralysis of the insane every patient is syphilitic, without every syphilitic having general paralysis of the insane, every person with mongolism might be syphilitic, although every patient with syphilis is not a mongol.

In common with other types of congenital mental deficiency mongolism shows abnormal incidence of insane heredity in the hereditary charts.

TABLE IV.

Case.	Insane Heredity.
1	None stated.
2	Fourth child imbecile.
3	Brother and sister idiots.
4	Step-brother insane (same father).
5	None stated.
6	None stated.
7	None stated.
8	None stated.
9	Epileptic step-brother (same mother).
10	None stated.
11	None stated.
12	Insane uncles.
13	None stated.
14	Father a Chinaman.
15	Nephew insane.
16	Grand uncle and aunt died in Kew Asylum.
17	None stated.
18	None stated.
19	None stated.
20	None stated.

Many of these charts were incomplete as regards the information of insane heredity, otherwise it is possible they would have shown a greater percentage than they at present do, which you will agree is above the average.

The brain weights of those examined *post mortem* are given in Table V.

The normal weights given are only approximate, but it can be seen that the weights are all below normal except in the case of the seven-year-old female.

In common with the majority of congenital mental defectives the mongols are all dwarfs. One of the females in this series has become pregnant and has been delivered by Cæsarean section.

TABLE V.

Age at Death.	Sex.	Brain Weight. Grammes.	Normal Brain Weight. Grammes.
5	Male	820	750 to 1,133
7	Female	1,175	1,133
8	Female	1,065	1,133
14	Male	1,078	1,150 to 1,300
15	Male	1,176	1,300
17	Female	1,060	1,300 to 1,360
19	Female	1,060	1,360
22	Male	1,150	1,360
26	Female	1,218	1,360
27	Male	1,170	1,360
31	Male	1,134	1,360
31	Male	1,134	1,360
37	Female	1,192	1,360

One of the patients was a half-caste Chinese, but his condition was diagnosed on the same symptoms as the others, special precaution being used to avoid the confusion between a half-caste Chinese idiot and a Mongolian idiot.

It has been stated that the cerebellum in the mongol is relatively smaller than in the normal, but in this series it was not so.

According to H. Vogt, mongolism is much less in Germany than in England, supplying 1% of the feeble-minded as against nearly 3% in England, which is about the same as in the Victorian Cottages at Kew.

Summary.

In this series the patients are either at the end of the family or the first born.

Of the patients at the end of a family, seven out of twelve were the second last, the other five being the last. This, occurring in moderate-sized families such as these are, might be explained by the parents preventing any further conceptions after they had experienced the shock of the appearance of the mongol.

There is a close association between mongolism and syphilis as seen by the *post mortem* examinations.

The stigmata accompanying the disease resemble the stigmata accompanying other conditions due to disease of the endocrines, such as cretinism and achondroplasia.

The term "products of exhaustion of the reproduction function" is inadmissible, unless it acknowledges physical ill-health in the parent. Exhaustion of the reproduction function without physical ill-health is sterility and consequently a state of affairs which results in no conceptions.

Only 3% of the congenital mental defectives segregated at Kew are "mongols," yet so far as can be elicited the factors under suspicion in mongolism are common to most of the patients segregated there. Although instances of mongolism appear "like a bolt from the blue," the result of this investigation supports the idea that insane heredity is present and can be elicited if carefully sought.

Although failing to determine the cause of mongolism, the data obtained from this investigation

will be useful to those wishing to carry the study of this abnormality still further.

References.

(1) W. A. T. Lind: "The Physical Basis of Insanity," THE MEDICAL JOURNAL OF AUSTRALIA, October 21, 1922, page 465.
(2) J. E. Middlemiss: "An Analysis of Two Hundred Cases of Mental Defect," *Journal of Mental Science*, 1920, Volume LXVI., page 254.
(3) W. A. T. Lind: "Ætiology of Congenital Mental Deficiency," THE MEDICAL JOURNAL OF AUSTRALIA, October 14, 1916, page 313.
(4) R. H. Vercoe: "The Effect of Position in the Family on the Health of the Child," *The Lancet*, October 7, 1922, page 758.
(5) W. Stoeltzner: "*Zur Ætiologie des Mongolismus*," *Münchener Medizinische Wochenschrift*, 1919, *Band* LXVI., *Seite* 1493.
(6) G. E. Shuttleworth: "Mongolian Imbecility," *The British Medical Journal*, September 11, 1909, page 661.
(7) "Imbecility and Idiocy," *The Medical Annual*, 1911, page 391.
(8) E. Holt: "Diseases of Infancy and Childhood," 1905.
(9) H. C. Stevens: "Mongolian Idiocy and Syphilis," *The Journal of the American Medical Association*, 1915, page 1636.
(10) H. R. Dean: "An Examination of the Blood Serum of Idiots by the Wassermann Reaction," *The Lancet*, July 23, 1910, page 227.

Reports of Cases.

ACUTE LEUCHÆMIA.

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THE following case presents some points of interest in view of the relationship between acute leuchæmia and the lymphocytosis of infection.

E.P., a lamplighter, *ætatis* fifty-eight years, was admitted to hospital on November 19, complaining of lumps in the neck and groins for six weeks, sore throat for one week and a cough and husky voice for three days before admission. His previous history revealed nothing except childhood complaints.

On examination he was found to be thin and weak. His face was flushed. The temperature was 37.8° C. (100° F.), the pulse-rate 110 and the respiratory rate 24. His voice was husky. The right tonsil was ulcerated; the lymphatic glands on both sides of the neck and in the axillæ and groins were enlarged to the size of an almond or larger; the glands were discrete, soft, painless and movable. The epitrochlear glands were not enlarged. Examination of the larynx revealed simple laryngitis. Râles were heard at the bases of both lungs and there was auricular fibrillation of the heart. There was a distinct purpuric rash over the left shoulder and left breast.

Course of the Disease.

The glands on the right side of the neck increased in size. The purpuric rash spread all over the body in five or six days and then faded. The temperature was intermittent, varying between 37.2° C. (90° F.) and 40° C. (104° F.); from November 24 to 27 the temperature was normal; during the last three days of life the patient had two severe rigors. On December 8 there was hæmaturia which lasted for two days. On December 13 patient complained of pain in the right side of the neck. An incision was made into the swelling on the right side of the neck, but no pus was found. Acute dyspnœa necessitated a laryngotomy on the same day. Shortly afterwards the patient died from asthenia.

Special Examinations.

The Wassermann test was applied but no reaction was obtained. Blood culture did not yield any growth of organisms. No growth of organisms was obtained from the urine. Throat swabs yielded *Staphylococcus aureus* as the predominating organism. A lymphatic gland was excised on November 30. The pathologist reported that the gland and surrounding tissues were infiltrated with inflammatory cells. There was no evidence of lymphadenoma. No growth was obtained on culture.

The blood count on November 23, at 4 p.m. was as follows:

Red blood corpuscles	4,248,000
Hæmoglobin	87%
Leucocytes	25,000
Polymorpho-nuclear cells	74%
Lymphocytes	15%
Eosinophile cells	9%

On December 10, at 4 p.m. the count was as follows:

Red blood corpuscles	4,080,000
Leucocytes	12,160
Polymorpho-nuclear cells	46%
Lymphocytes	50%

The mono-nuclear leucocytes at this date appeared as: (i.) ordinary looking lymphocytes, (ii.) large lymphocytes with deep blue protoplasm (some as large as 15μ in diameter) and (iii.) mono-nuclear cells of large mono-nuclear type. There were considerable numbers of myelocytes and premyelocytes.

Post Mortem Findings.

A *post mortem* examination was made twenty hours after death.

The lymphatic glands of neck, thorax, abdomen, groins and axillæ were much swollen. When incised the larger glands were seen to have a red centre and a surrounding white border. On microscopical examination hyperplasia was detected; the glands were packed with lymphocytes (mainly large). The right tonsil was ulcerated. There was an abscess cavity behind the glands on the right side of the neck.

The thyreoid gland was normal.

There were universal pleural adhesions on the right side; the left pleura was normal.

The lungs were congested; aspiration pneumonia was present at the base of both lungs. There was a slight excess of fluid in the pericardium.

The heart was flabby and the endocardium stained. Definite internal staining was seen in the aorta.

The liver weighed 2.4 kilograms (five pounds, four ounces); it was fatty and cloudy. On microscopical examination groups of lymphocytes were seen here and there in the portal spaces.

The spleen weighed 680 grammes (twenty-four ounces). It was large and contained white infarcts; it was a soft pink "raspberry-jam" spleen. A pure culture of streptococcus was obtained from the infarct and from the spleen.

The pancreas was normal.

The kidneys weighed 255 grammes (nine ounces. They were cloudy and fatty. Microscopically desquamation of the tubules was seen.

The bladder was normal.

The alimentary canal was normal. There was no lymphocytic infiltration.

There was a striking absence of myelocytes and polymorpho-nuclear cells in the bone marrow. Nearly all the cells were non-granular mono-nucleated and of various types, including what appeared to be myeloblasts and lymphocytes. Nucleated red cells were scanty.

Comments.

The clinical picture closely resembled that of acute lymphatic leuchæmia.(1) The *post mortem* appearances were those of acute lymphatic leuchæmia and in addition there were found an abscess cavity in the neck and streptococci and infarcts in the spleen, showing that there had probably been a blood infection. The question might be put whether this was a case of acute lymphatic leuchæmia with a superadded infection(2) or a case of septicæmia with an output of abnormal lymphocytes in the blood and producing a conditin of the bone marrow and liver such as is found in acute lymphatic leuchæmia.(3)(4) I do not think that septicæmia could be excluded on admission, in spite of the failure to isolate bacteria from the blood. The fever and

the purpura both suggested local or general infection. The type of fever is not unlike that of the Pel-Ebstein type in lymphadenoma, which may be due to infection.[5]

The mode of onset in this case is not sufficiently clear to enable a positive diagnosis being made. In any event, it seems probable that acute leuchæmia is due to an infection from which the patients do not recover and that acute infective lymphocytosis is due to an infection from which they generally do recover;[6][7] possibly glandular enlargement is more common in leuchæmia, but the condition of generalized lymphadenitis associated with infection[8] has been recognized only during the last few years, so that there may have been some confusion of the two conditions in the literature up to recent years. For this reason Fairley's recent paper was a valuable contribution.[9]

The publication as fully as possible, of such cases as the above may help to clear up the relationship between acute infective lymphocytosis, with or without glandular enlargement, and acute leuchæmia. The infective nature of acute leuchæmia has been studied in fowls, but the conclusions cannot yet be made to apply to man.[10]

My thanks are due to Dr. James Collier for permission to publish the notes of this case and to Sir Humphry Rolleston for his opinion and advice in connexion with the pathological aspect of the case.

The pathological examinations were made in the Pathology Department at St. George's Hospital.

References.

(1) Clifford Allbutt and H. D. Rolleston: "A System of Medicine," Second Edition.

(2) H. D. Rolleston and J. D. Rolleston: "A Case of Chronic Lymphoid Leuchæmia with Much Benefit from Benzol Treatment," *The British Journal of Children's Diseases*, February, 1915, page 33.

(3) H. Bourges: "*A Propos du Traitement de la Leucémie Myéloide par le Benzol*," *Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris*, 1918, Volume XLII., page 1149.

(4) G. R. Ward: "Secondary or Symptomatic Leukæmia," *Proceedings of the Royal Society of Medicine*, February, 1914, Section of Medicine, page 126.

(5) F. Parkes Weber: "The Pel-Ebstein Recurrent Pyrexial Type of Hodgkin's Disease (Lympho-granulomatosis Maligna)," *Proceedings of the Royal Society of Medicine*, 1917, Clinical Section, page 42.

(6) R. C. Cabot: "The Lymphocytosis of Infection," *The American Journal of the Medical Sciences*, 1913, Volume CXLV., page 335.

(7) A. J. Hall: "A Case Resembling Acute Lymphatic Leuchæmia, Ending in Complete Recovery," *Proceeding of the Royal Society of Medicine*, 1915, Medical Section, page 15.

(8) William Osler and T. McCrae: "Modern Medicine," 1915.

(9) K. D. Fairley: "The Leucocytes in Health and Disease," THE MEDICAL JOURNAL OF AUSTRALIA, June 16, 1923, page 655.

(10) M. C. Winternitz and H. C. Schmeisser: "Mesenteritis of the Pulmonary Artery," *Johns Hopkins Hospital Reports*, 1919, Volume XVIII., page 145.

Reviews.

DISEASES OF THE WAR.

THE perusal of the second volume of the section of the "History of the Great War, Based on Official Documents—Medical Services: Diseases of the War,"[1] brings home to the reader the fact that the good old days when a very modest stock of medical lore was looked for in members of the military medical services have indeed passed away. Some hundreds of pages are devoted to a description of the signs and symptoms, methods of protection against and treatment of the effects of the various poison gases used in the late war. As the intricate though thrilling story is read, the reader cannot but feel that if the army physician of the future is to add all this to his store of information, the time has arrived when the civilian practitioner so far from regarding him with the old-time feeling of amiable tolerance will have rather to adopt the attitude of Goldsmith's villagers towards their gifted schoolmaster. But it is a pathetic story and we have read nothing better calculated to dispel the glamour of war than the dispassionate descriptions given in these articles of the almost incredible tortures endured by so many thousands of our troops.

The remainder of the volume is concerned with war neuroses, diseases of the skin and venereal diseases and contains much that is of great practical interest to the whole profession.

There is also an admirable article upon the medical aspects of aviation.

The various articles are contributed by writers who are thoroughly in touch with their subjects and there are many excellent illustrations. The book should find a place alongside the first volume on the bookshelves of all who aim at keeping abreast of the times in their medical reading.

[1] "History of the Great War Based on Official Documents—Medical Services: Diseases of the War," edited by Major-General Sir W. G. Macpherson, K.C.M.G., C.B., LL.D., Major-General Sir W. P. Herringham, K.C.M.G., C.B., Colonel T. R. Elliott, C.B.E., D.S.O. and Lieutenant-Colonel A. Balfour, C.B., C.M.G.; Volume II.; 1923. Edinburgh: His Majesty's Stationery Office; Demy 8vo., pp. viii. + 621, with twelve figures. Price, post free: 26s. net.

GONORRHŒA.

THE first edition of A. Reith Fraser's comprehensive monograph on gonorrhœa[1] reaches a far higher standard than most works on the subject appearing hitherto.

The author introduces the work primarily as a plea for the conservative treatment of gonococcal urethritis and for the management of gonorrhœa as a general systemic disease instead of as a local specialized catarrh.

Dr. Fraser writes clearly and perusal of his pages makes it obvious that he has had great experience in dealing with patients suffering from venereal disease. The whole subject is well covered and much will be found, both in idea and arrangement, that is refreshingly original. Each chapter contains a well reasoned summary of conclusions and also a bibliography. The author's views are stated clearly and with conviction and must everywhere be treated with respect, though all may not agree with his statement that the urethroscope has no place in the routine treatment of chronic urethritis nor with his interpretation of the gonococcus complement fixation test.

Although the greater part of the work is devoted to gonorrhœa in the male, due consideration is given to that aspect of gonorrhœa in the female with which the practitioner who confines himself to venereal diseases, is concerned.

Special mention may be made of the chapters on the standard of cure. It is obvious that no medical practitioner can claim to treat gonorrhœa successfully unless he adopts an adequate standard of cure. That section dealing with the standard of cure in the female is particularly fortunate for the majority of writers on gonorrhœa in women are curiously silent on this point. Even if the standard is not always completely attainable, its enunciation has, at any rate, the virtue of directing attention to the necessity of attempting to attain it.

There are numerous plates and figures, many of which are original sketches by the author. Those representing pathological conditions might well have been replaced by photographs, for many are unconvincing and few can be considered first-class.

Altogether, the book is a valuable addition to medical literature and may be recommended as an up-to-date and thoroughly practical account of the subject.

[1] "A Monograph on Gonorrhœa," by A. Reith Fraser, M.D. (Aberd.); 1923. London: Henry Kimpton; Royal 8vo, pp. xvi. + 508, with 56 illustrations and 49 plates. Price: 18s. net.

THE CARRIER PROBLEM.

THE growing belief in the importance of the carrier in infectious diseases both in mankind and animals is illustrated by the growth of literature on the subject. But a few years ago it was contained in various papers in medical journals, more recently in monographs and now the manual has appeared. Dr. H. J. Nichols, the author of "Carriers in Infectious Diseases,"[1] has evidently had considerable experience in carrier problems both in civil and military life and is well seized with the importance of the subject. Being a manual especially prepared for the use of students and physicians, the text-book or didactic style of presentation has been adopted rather than the monographic. A carrier is defined as "an individual who harbours and transmits pathogenic parasites without showing the usual evidences of infection." But as the author proceeds to show, many carriers and usually the most intractable are not really healthy, but possess chronic inflammatory lesions in which the germs carried have their lodging place. The usual classification of carriers—incubationary, convalescent, chronic and pseudo-carrier—is given, but is extended by an additional class of possible carriers. The necessity for the psuedo-carrier group is well shown in diphtheria, but the possible carrier group is not self-evident. In it, however, the author groups the carriers of such germs as influenza bacilli, streptococci *et cetera*, the pathogenic significance of which is not yet determined. This group will automatically dwindle with the progress of knowledge.

Following on a section on general considerations in which the importance of the problems, the underlying pathology and the general lines of treatment are discussed, the special diseases are dealt with individually. The list of diseases in which the existence of carriers has to be taken into consideration, is a formidable one, but is perhaps unnecessarily amplified by the inclusion of some in which the existence of carriers is still rather problematical. Pride of place is naturally given to the discussion of the problem in typhoid including the paratyphoid fevers and in diphtheria; but such other diseases as cholera, the dysenteries, helminth infections, epidemic meningitis, pneumococcus pneumonia, streptococcal infections, sexual diseases and others are shown to have their special carrier problems. In each case the types of carriers that exist, the special conditions under which they occur, their pathology and treatment are described. The discussion on the relation of the carrier problem or phorology, to use a term suggested by the author, to preventive medicine ends this portion of the book. Stress is laid on the necessity in all carrier investigations for full and close cooperation between the physician and surgeon, the sanitarian and the bacteriologist or pathologist.

The chapter on carriers in veterinary medicine by R. A. Kelser occupies a third of the book. This subject is considered under three headings. Under the first, "Carriers of Organisms Pathogenic for both Man and the Lower Animals," such organisms as *Bacillus melitensis* (Malta fever), *Bacillus tuberculosis*, *Bacillus enteriditis*, *Bacillus tetani*, *Bacillus anthracis*, *Bacillus mallei* (glanders), *Bacillus tularense*, *Bacillus pestis* and a few others are treated from the point of view of the existence of animal carriers of these organisms. The second heading, "Carriers of Organisms Pathogenic for Animals and Possibly for Men," is concerned with the streptococcus of infectious mastitis of cattle, *Bacillus abortus* and certain trypanosomes and intestinal protozoa. The third heading, "Carriers of Organisms Pathogenic for Lower Animals Only," comprises a list of bacteria, protozoa and filtrable virus of interest mainly to the veterinarian.

The book is illustrated by some ten photographs of the chronic foci found in typhoid fever and diphtheria and by two charts.

[1] "Carriers in Infectious Diseases," by Henry J. Nichols, M.D., M.A., with a Section on Carriers in Veterinary Medicine, by R. A. Kelser, D.V.M., M.A.; 1922. Baltimore: Williams & Wilkins Company; Demy 8vo., pp. 184, with nine plates. Price: $3.00.

CHRONIC TRAUMATIC PERIOSTEO-MYELITIS.

IN his book "On Chronic Traumatic Periosteo-Myelitis of the Femur and Tibia Near the Knee," Dr. A. H. Bizarro presents a brief account of the subject with a somewhat cumbrous attempt at classification of the various sinuses met with in the regions under consideration.[1] Notes are given of sixteen patients in whom the tibia was affected as a result of old war wounds and nine in whom the femur was the site of the lesion. It is not stated whether this constitutes the author's total experience, but it would appear that this is so. A few of the statements made are amusing, others are open to argument and the rest are in accord with common experience. As examples of each the following may be cited: "Whatever the variety of sinus, it is possible at times to gauge its extent by the amount of discharge collected in twenty-four hours." "Age is an important factor in the causation of chronicity of the sinuses." "The main feature, however, of the inflammatory process (in the tibia near the knee) is its rarefactive character, contrasting markedly with the sclerosing osteitis which is a feature of lesions of the lower end of the bone." One characteristic of these conditions referred to, however, is not commonly appreciated. This is the liability to recurrent attacks of an acute dermatitis closely resembling erysipelatous infection and streptococcal in origin. During the course of this dermatitis the knee-joint may show reaction or even develope a purulent arthritis. As regards treatment, the usually accepted method is followed of free excision of all overhanging bone with the formation of a gutter depression into which soft tissues will fall. In addition, the author makes use of pedicle muscle-grafts and skin to fill in and cover over the wound area. It is rather remarkable that "drainage was not used in any of the cases." A number of X-ray photographs are shown, but they have been reproduced badly and yield little if any information. The text is given in both Portuguese and English.

HÆMATOLOGY IN GENERAL PRACTICE.

DR. KNYVETT GORDON'S book on hæmatology in general practice is intended as a guide to the general practitioner in the utilization of a rough examination of a blood film in the diagnosis and prognosis of certain diseases.[2]

The text is essentially practical and all doubtful theoretical considerations are excluded. The result is a little book teeming with useful information which may give even the specialist food for thought.

In the first three chapters the author deals with the origin of the blood cells and the apparatus and technique used in blood examination. In the next three, he deals with the normal blood picture and the various pathological cell forms met with in blood films. The cigarette-paper method of making a film is preferred, while for detailed examination the panoptic method of staining (a combination of Jenner and Giemsa stains) is advocated.

Short chapters on the various blood diseases follow and then instructive discussions on acute pyrexial diseases and chronic bacillary and coccal infections. It is pointed out that blood examination often reveals the type of infective agent, a relative polymopho-nuclear leucocyte predominance being found with coccal infections and a relative lymphocytosis in bacillary infection. By this simple examination many patients with rheumatoid arthritis may be saved from needless extraction of teeth when the blood picture shows the infection to be bacillary and not coccal.

Interesting concise case histories are used as illustrations through the text.

The little book more than fulfils its object and will repay careful perusal.

[1] "On Chronic Traumatic Periosteo-Myelitis of the Femur and Tibia Near the Knee," by A. H. Bizarro, M.D., F.R.C.S. (England); 1922. Lisboa: Imprensa Nacional; Demy 8vo., pp. 74, with thirty-one plates.

[2] "Hæmatology in General Practice," by A. Knyvett Gordon, M.B., B.C., B.A. (Cantab.); 1923. London: Baillière, Tindall & Cox; Crown 8vo., pp. viii. + 100, with three plates. Price: 5s. net.

The Medical Journal of Australia

SATURDAY, SEPTEMBER 15, 1923.

Medical Libraries.

Towards the latter end of last year we drew attention to the inadequate library facilities existing in the several States of the Commonwealth for medical practitioners. More than one member of the medical profession expressed appreciation of the suggestions made at that time, but it would not appear that anything definite has been done in the direction of improving the opportunities for reference to current medical literature for practitioners as a whole. That the question has exercised the minds of some is seen in the fact that in March of this year the newly formed "South-Western Division" of the Victorian Branch of the British Medical Association decided to approach the Council of the Victorian Branch in an endeavour to obtain circulating library facilities for members in the country.

To the earnest student, keen on research, the need is a pressing one. He realizes this and suffers accordingly, but he and those like him are a mere handful. There are, in addition, many practitioners who, not content with satisfying immediate needs, endeavour to keep abreast of many aspects of progress in medical science. In spite of these it must be confessed that there are many by whom the value of reading and reference to the work of others is not sufficiently appreciated. To many a medical man a book is something to which he may turn when he wishes to know what course of treatment he should adopt in dealing with a particular patient under his care. William Osler said that to study the phenomena of disease without books was to sail an unchartered sea, while to study books without patients was not to go to sea at all. By this Osler did not mean to imply that books were to be used as a kind of index to treatment. To continue his metaphor, it is not sufficient to take a mid-day reading by the sun and enter it in the log book unless the course that it is desired to steer, is mapped out. There must be a point of departure. The port which is sought, may be in an unknown land, but it will be found with greater ease if the soundings of other observers are noted, if the currents which they have found setting in the right direction, are utilized and if the shoals and reefs they have encountered, are avoided. Correlation is important and indispensable. More than a knowledge of the history of the disease is necessary. The student of history can see things in their true perspective and if he be farseeing enough, he may be able to foretell the trend of subsequent events. The first step towards the establishment of adequate library facilities in Australia is the recognition by all and sundry of the need for them.

The suggestions previously made in this regard were two in number. First it was thought that an attempt might be made to induce the owners of libraries to centralize all medical publications and to pool the money spent in this way. Reference was made to the way in which this has been done in South Australia. Here the Adelaide University and the South Australian Branch of the British Medical Association have combined to earmark funds for the establishment of a single library which is housed in the Darling Building. The second suggestion was that by active cooperation medical practitioners should band together and form a common fund for the purpose of subscribing to many journals instead of as at present all subscribing to the same or similar publications. In either case organization is necessary, energy must be expended and much work is entailed.

In considering these two suggestions it will be at once seen that the greatest good will accrue to the greatest number if the first be adopted. Bodies outside the British Medical Association, such as universities and scientific societies, conservative though they be, might be brought to consider the scheme. Once the principle were conceded it should not be beyond the wit of the governing bodies to devise a plan nor beyond their power to carry it out. After all it would be a step towards economy together with increased usefulness. If a complete library were in existence, it might be possible to in-

stitute a lending or circulating library as was suggested by the "South-Western Division" in Victoria. The country practitioner has to be considered.

It would be a good thing if the librarians of the several Branches were to foregather in Melbourne at Congress time and discuss the subject. Any assistance that can be given by THE MEDICAL JOURNAL OF AUSTRALIA in this regard will be gladly rendered.

Current Comment.

THE SUTURE PROBLEM IN HERNIA.

IT is common experience that recurrence is prone to occur after operations for many forms of herniæ. Perhaps the most unfavourable of all are large traumatic ventral herniæ, although some long standing direct inguinal herniæ in persons who have made the acquaintance of middle age, are the source of grave disappointment and not a litte misgiving to all surgeons. The frequency of recurrence after operations for the radical cure of inguinal and femoral herniæ in all but young people is probably rather a matter of chance than of good management, for the defect appears to lie in the patient. If the intra-abdominal strain is great and the hernial ring has gaped during the process of healing, the scar will be too little resistant to withstand the pressure. Much work has been carried out in the endeavour to overcome this defect, but success has been capricious, possibly because these endeavours have been guided by preconceived ideas rather than by accurate observation. It would seem that all that is necessary would be to employ sutures of sufficient strength and durability to insure firm healing. The nature of the union has scarcely been considered nor has the surgeon taken into account the risk of the scar tissue undergoing a thorough stretching under continuous pressure. In these circumstances it is refreshing to learn that Dr. W. E. Gallie and Dr. A. B. Le Mesurier have been engaged for some years in a close study of the histology of the union of the aponeurotic tissue after operations for hernia and in a search for a method whereby the defects found in the ordinary process of repair might be avoided. Two years ago they read a paper before the Ontario Medical Association, but they have withheld the publication of this communication until now, so that additional support might be given to their arguments by the test of time.[1] They found that when wounds in an aponeurosis were sutured with catgut, there was an immediate inflammatory reaction in the neighbourhood with the formation of a film of new connective tissue. This film at first consisted of ordinary granulation tissue of proliferating cells and blood capillaries. Later the cells and vessels disappeared and their place was taken by irregularly arranged connective tissue fibres. In no instance was there any evidence of an inflammatory reaction in the cells of the aponeurosis. Close histological study revealed that the new tissue uniting the cut edge of the aponeurosis was made up of irregularly placed fibres which tended to yield under strain. Even when the edges of the aponeurosis were scarified and overlapped in the process of suturing, the union did not become sufficiently strong to resist the effects of unusual strain. The interposition of a free transplant of *fascia lata* was tried combined with scarification of the edges and the avoidance of tension. The microscope again revealed defects after healing. The union between the transplant and the aponeurosis was by foreign scar tissue which tended to stretch, leaving weak spots as a basis for recurrence. These and many other experiments and observations led the authors to the conclusion that success could only be attained if they could discover some material for holding the edges of the hernial ring together that would be stronger than the usual scar tissue formed after simple suture. They conceived the idea of utilizing strips of living *fascia lata* as a suture material. The fascia would, it was thought, continue to live and to maintain its original unyielding character. In the first place they experimented in rabbits, taking strips of fascia from the back and using these strips to lace the cut edges of fascia or aponeurosis. The cut edges were left a considerable distance apart, in order that the strain would be borne entirely by the sutures. The strips continued to live and after a period of two years they appeared as rounded, glistening cords of exactly the same length as when they were inserted. Cross sections of these strips of fascia were examined under the microscope. The fibres were seen to be arranged in parallel, regular bundles, separated by a few vascular connective tissue septa.

Having found the material that would survive and retain its strength when employed as sutures, they set to work to test its utility in the actual closure of the hernial ring. The operation in direct inguinal hernia was performed in the usual manner. When the stage of suturing the ring was reached, the *fascia lata* at the outer side of the opposite thigh was exposed by a long incision and cleared of areolar tissue. A small incision was made into the fascia parallel to its fibres and strips were split off by means of blunt pointed scissors. The strips were about twenty-five centimetres in length. A large-eyed needle was threaded and the loop securely tied with catgut to prevent slipping. The suting was carried out by passing the needle through the edge of the gap and then through the terminal end of the suture. When the suture was drawn tight, a kind of slip knot was formed which was found to hold well. The suturing was continued by a process of lacing, with an occasional knotting of the suture on itself. A fresh strip was attached in a similar manner, when the end of the first was reached. When the gap was completely closed, the end of the fascia was slit in two lengthwise and knotted on

[1] *The Canadian Medical Association Journal*, July, 1923.

itself. Care was taken to strengthen the edges of the internal ring. When the muscles appeared to be so weak that they were likely to yield to severe intra-abdominal pressure, a second line of sutures was inserted outside the first line. These sutures were not rendered taut, but were merely drawn until they lay flat. The second line included the junction of the internal and external oblique aponeuroses. Similar technique was planned for femoral herniæ and for ventral herniæ. They claim that in all patients on whom the living sutures were employed for the closure of the hernial ring, the repair has been maintained for many months and even years. There was no sign in any of them of a recurrence of the hernia nor even a suspicion of any stretching of the supporting sutures. They have tested the method on an ex-soldier who had a very large ventral hernia, the result of a shell wound. The ring measured eighteen centimetres by ten centimetres. This man had been able to folow his former trade without disability for upwards of three years.

Drs. Gallie and Le Mesurier claim for the living *fascia lata* sutures advantages over catgut and other absorbable material that they are not absorbed and that they continue to perform the function for which they were originally designed. Over silk sutures they have the advantage that they are composed of living tissue which is not irritant and that they heal solidly into the structures through which they pass. They have found that instead of a differentiated band of scar tissue uniting the edges, the healed living suture passes insensibly into the tissue surrounding it. Moreover they point out that when it is impossible to draw the edges together without undue tension, the living sutures form a bridge of lacing, like the darning of a sock, which is able to resist both intra-abdominal pressure and muscular strain. The weakest part would be the grip taken of the edges of the ring, but as this is part of the aponeurosis, it is sufficiently strong to withstand all the strain to which it may be exposed. That this is not merely theoretical is shown by their experiments on rabbits by their careful histological studies and by the long trial they have given the method when applied to persons with herniæ.

The basis of this method is sound. It remains to be seen whether the strips of *fascia lata* will remain living when handled by other surgeons and whether they can always be trusted to maintain their great strength and unyielding characters.

A NEW BISMUTH PREPARATION.

In a recent issue of this journal attention was directed to the use of bismuth in the treatment of syphilis. The work of Levaditi and Sazerac in connexion with the employment of an oily suspension of an insoluble salt, the tartro-bismuthate of soda and potash, has been discussed and a certain extent the therapeutic value of this substance which is sold under the proprietary name of "Trépol," has been examined. While the French investigators have explored this field from one point of view, it appears that the workers at Nocht's Institute in Hamburg have been attacking the bismuth problem from another aspect. These investigators have turned their attention to the activity of certain soluble salts of bismuth in syphilitic rabbits. Horta and Ganns found that sodium bismuthyl tartrate exercised a powerful anti-syphilitic action. This substance has been called "Natrol." Professor Giemsa has endeavoured to discover a measure of the chemo-therapeutic value of anti-syphilitic remedies, in order that exact comparisons can be made. He found that this measure could be expressed as that fraction of the largest tolerated dose that when injected once into the subcutaneous tissue of a syphilitic rabbit, would lead to complete healing. It appears that one quarter of the largest tolerated dose of "Natrol" suffices to cure infected rabbits. Professor G. Giemsa and Dr. W. Weise now give an account of their continued chemotherapeutic studies on the soluble bismuth preparations.[1] They have prepared various substitution compounds of sodium bismuthyl tartrate. In one they have introduced two and in another three bismuth oxide groups. The former contains 63.65% of bismuth and the latter 71%. The tri-bismuthyl tartrate proved to be extraordinarily well tolerated by mice. Given intravenously to rabbits the lethal dose was found to be 0.01 gramme per kilogram. That of "Trépol" was found to be 0.005 gramme per kilogram. The lethal dose of "Natrol" and of sodium di-bismuthyl tartrate was found to be smaller than the tri-bismuthyl salt, but larger than that of "Trépol." In the next place the index of these preparations was determined. "Natrol" is, as was stated above, 1:4; sodium di-bismuthyl tartrate is 1:10 and sodium tri-bismuthyl tartrate is 1:35. In other words the tri-bismuth group compound has been shown to be almost non-toxic and highly effective as an anti-syphilitic in rabbits. The authors state that the index of "Trépol' is probably the same as that of "Natrol." They recognize that in the treatment of syphilis in human beings "Trépol" has been proved to be efficacious. In their opinion, however, it is desirable to have a more potent remedy and they also question the advisability of creating depôts of a dangerous metal like bismuth. The advantage of more or less continuous action from the depôt is said to be counteracted by the impossibility of controlling the rate of liberation of the metal from the depôt. By giving a soluble preparation intravenously they are able to avoid all risk of a cumulative action, although it can be shown that the bismuth compound is held in the tissues for some time. In this way there is a prolonged action without any danger of a sudden overdose. Their experiments with infected rabbits have led them to the conclusion that this new soluble bismuth preparation is capable of killing the spirochætes of syphilis and of relapsing fever and the Nagana trypanosomes with the greatest ease. The preparation is being tried in patients suffering from syphilis. The authors announce a full report on the clinical experience when the trials are completed.

[1] *Klinische Wochenschrift*, July 2, 1923.

Abstracts from Current Medical Literature.

ORTHOPÆDIC SURGERY.

Dislocation of the Hip.

ADOLF LORENZ (*New York Medical Journal and Medical Record*, February 7, 1923) has devised a new method of dealing with irreducible dislocations of the hip. Though ætiologically different, irreducible congenital or acquired hip luxations and similar conditions, such as ununited fractures of the neck of the femur and *coxa vara luxans*, have anatomically in common a loosened connexion between the pelvis and the upper end of the femur. The pelvis and the trunk are no longer directly supported by the bony pillar constituted by the femur but are suspended by the soft parts upon the upper end of the femur. Such similar anatomical conditions account for similar functional symptoms. There is flexion and adduction, dropping of the pelvis towards the sound side, limping, lack of endurance and inability to walk because of pain due to stretching of the soft parts by the weight of the body. The problem to be solved is to change the elastic suspension of the body on the upper end of the femur to the direct bony support of the pelvis by the femur. This is done by an oblique cut of the femur at level of the acetabulum. The upper end of the lower fragment, the substitute for the head, is reduced into the capsule covering the acetabulum, while the lower end of the upper fragment is brought into contact with the lower fragment with which it will unite by bony tissue. In this way the upper end of the femur becomes transformed into a fork with two unequal teeth or prongs. On this account the procedure is called bifurcation of the upper end of the femur. In performing the operation the author places the patient upon the sound side and makes a longitudinal incision until the surface of the femur is laid bare. A broad chisel is then applied to the bone in an oblique line extending from the anterior aspect posteriorly and distally. The upper extremity of this cut should correspond with the lower end of the acetabulum and the bone should be cut through. The lower fragment is then handled so as to push the upper end into the empty acetabulum. The lower end of the upper fragment is pushed inwards so as to form an angle at its junction with the upper end of the lower fragment. The fragments are not sutured together as their position is sufficiently assured by the abduction of the lower fragment. The position is maintained by the application of plaster of Paris from the waist to the toes and while this is being done the assistant maintains the contact between the new head and the acetabulum by leaning against the limb. About a fortnight later the patient is allowed out of bed and may begin standing and walking. After six weeks the bandage is cut and discontinued at the knee joint to prevent rigidity. After two months the bandage is shortened to the size of a hip spica leaving the knee free. Not before at least three months have elapsed may the spica be taken off.

Spinal Fixation in Pott's Disease.

G. R. GIRDLESTONE (*The British Journal of Surgery*, January, 1923) deals with the place of operative treatment for spinal fixation in Pott's disease. In the past, operation has too often been thought of as a short cut to the cure of the disease. This mistaken view has led to many failures and disappointments. In the spinal lesion the gradual processes, which end in cicatrization, take their inevitable time. And this lesion is only a part of the general attack by the tubercle bacillus. The invader is gaining ground because the victim is exhausted. Two aims in treatment must be remembered. The patient's general health must be restored to allow his powers of reaction to rise superior to the destructive activities of the disease and the spinal lesion must be healed. Operative spinal fixation may help in the splintage of the disease and add to its stability afterwards. The author gives a description of the statics of the spine in relation to the formation of deformities. In discussing the actual achievement of spinal fixation he says that it aids treatment by rest and shortens the time but cannot replace either. It also prevents deformity if it suffices to maintain local extension of the diseased part after the patient gets up. The operative technique favoured by the author is founded on Albee's method. He used a graft from the tibia in ninety-five instances. In the remaining five instances of his series osteoplastic methods were employed. The operative mortality was 2%. One, a child of five, died of shock within twenty-four hours. A *post mortem* examination revealed the fact that the graft had been placed too deeply and was pressing on the cord. The author's later results are better than the early ones. This is attributed to the use of a turning frame and to improvement in after-care. The turning frame is essentially a removable anterior plaster bed extending from the chin to the ankles. It is used during preparation for operation, at the actual operation and is applied for the purpose of dressing the wound in after-treatment. Fixation by the graft should not be relied on for four months, after which a spinal support is worn in bed for one month. Some spinal support should be worn for one year after the patient is allowed to get up. Grafts in young children are unreliable and not particularly needed.

The Treatment of the Flail Ankle.

THE methods of stabilizing the ankle joint in persons whose joints below the talus are ankylosed, are based on the belief that lateral stability of the ankle is entirely a function of the subtaloid joint. This is, no doubt, true for the normal joint, but in the paralytic flail ankle the ankle joint itself is not well formed and consequently lateral movement can occur even in the presence of arthrodesis of the subtaloid joint. To meet this deformity, Arthur Steindler (*The Journal of Bone and Joint Surgery*, April, 1923) has devised a pan-taloid arthrodesis. A U-shaped incision is made round the lateral malleolus to expose the joint surfaces of the tibia and fibula as well as the body of the talus. The ankle joint is opened and all cartilage is removed until nothing but raw cancellous bone is left. By pulling the body of the talus upwards the subtaloid joint is brought into view and is completely denuded of its cartilage. Lastly, after division of the talonavicular ligaments, the joint between the talus and navicular bone is opened and treated in a similar manner. In the whole manœuvre the talus remains attached only by its inferior ligaments. The most suitable position for the foot following operation is that of perfect lateral alignment with about 20° plantar flexion; a greater drop of the foot is not well tolerated. Plaster of Paris retains the foot in this position for three to five months. A flail foot, not deformed, associated with a good knee or at least good or moderately good knee flexors, is best suited for this method. The author has carried this operation out on thirty-six patients. Ankylosis was sufficiently firm in practically all. In two instances, osteotomy of the tibia was performed later in order to procure proper alignment of the knee and ankle.

Electrical Treatment of Infantile Paralysis.

G. MURRAY LEVICK (*The Journal of Bone and Joint Surgery*, April, 1923) contends that the most important factor in the electrical treatment of muscles affected by anterior poliomyelitis has escaped notice. This factor is the preservation of contractility in the muscles. If adequate electrical treatment is not given, the atrophy of the muscles is greater and is usually accompanied by loss of contractibility of some degree. The author contends that his observations are supported by the accepted theory of muscle contraction which has been put forward by Shaffer. When a muscle contracts, the clear contractile substance passes into the tubes of the sarcous element which are elastic and are dilated by its entry. As long as a muscle remains in a state of complete relaxation, the tubes remain constantly contracted. It appears to the author that the atrophy following paralysis, besides causing absorption of the contractile substance, is accompanied by a loss of elasticity of the sarcous element and the tubes can no longer dilate to a proper extent for the contraction of the muscle. The author admits, however, that relaxation of the paralysed muscle is far more important even than electrical treatment. Directions for giving adequate electrical treatment are supplied and the author illustrates these by reference to patients whom he has treated.

PÆDIATRICS.

The Basal Metabolism of Premature Infants.

F. B. TALBOT, W. R. SISSON, M. E. MORIARTY AND A. J. DALRYMPLE who have published the results of their earlier studies of the basal metabolism of premature infants, give a detailed account of observations on twenty-one premature infants (*American Journal of Diseases of Children*, July, 1923). The criteria of prematurity were weight, body length and general characteristics. The infants selected were judged to be from four to eleven weeks premature. The majority of the babies weighed less than two kilograms; many were too feeble to suck at the breast and their temperature was subnormal during the first few days of life. They were kept in a room the temperature of which varied between 24° C. and 27° C. and they received the usual nursing care. Their diet consisted chiefly of human milk; at times a modified cow's milk was substituted. The gain in weight was usually small in the early period. For about seven days the infants often remained at the same weight level as at birth. The authors discuss many point of technical interest in connexion with the determination of the respiratory quotient of very small babies. The average respiratory quotient was 0.96. It appears that the respiratory quotient of new born babies falls rapidly during the first three days of life to an average of 0.73 and then rises until the eighth day. The total calories produced in twenty-four hours increased gradually with the age of the infants. The lowest records were found in four infants during the first ten days of life. There did not seem to be any relationship between the heat production and the prognosis as to life in these premature infants. In some infants there was a low initial production, such as thirty-seven calories, increasing slowly. In such circumstances the nutrition appeared to be bad. One of these infants died. But several infants whose heat production increased consistently, also remained weak. The total heat production of premature infants tends to run parallel with that of normal infants when judged by age, but at a considerably lower level. The heat production at the time of the expected birth was found to be close to the normal at birth. From their studies the authors arrive at the conclusion that the earliest age at which a premature infant weighing between 1.81 and 2.27 kilograms at birth catches up the weight and nutrition of a normal baby, is about three or four months. Premature infants weighing more than 1.8 kilograms have a heat production somewhat greater than that of a normal infant. Infants weighing between 1.2 and 1.8 kilograms have a varying heat production. The authors assume that the causes of variation of heat production in badly nourished infants are identical with the causes of variation in premature infants. There does not appear to be any relationship between the sitting height of the infant and its heat production. When measured in relation to the square metre of body surface the calories produced are usually less than in the normal infant. In some it was as low as 330 and 360 calories. The number of calories per unit of body surface seemed to vary rather with age than with weight. It thus appears that the premature infant produces less heat than the normal infant and consequently requires much more protection against heat loss than normal infants. Allowance has to be made for the fact that the majority of premature infants are too feeble to take exercise, although it was found that muscular activity influenced the heat production as it does in the normal baby.

Cœliac Disease.

R. MILLER calls attention to the view that cœliac disease may give rise to such distension of the colon as to cause visible colonic peristalsis (*The British Journal of Children's Diseases*, April-June, 1923). This condition in children past the age of infancy may be mistaken for megalocolon. He further insists that cœliac disease is a digestive fault and not an organic disease. He gives a few details of an illness of an undersized boy who came under observation at the age of five years. His illness was diagnosed as cœliac disease. The stools were typical. When taking an ordinary diet he passed fæces containing 36% of fat. His colon was greatly distended, but no peristalsis was visible. He was placed on a diet containing little fat, but the diarrhœa continued. Two months later he again came under observation. At this time there was evident peristalsis of the colon. The bowel was greatly distended. Still later the peristalsis had disappeared, while the distension of the colon still remained. His stools contained 60% of fat. An impacted calculus in his urethra led to obstruction of urine. He died three months later. At autopsy it was found that the omentum contained large quantities of fat. The intestines were heavy from the fat in them and possibly from œdema. The colon was normal in size except for a portion about twelve centimetres in length which was dilated. These findings and the history of the illness support him in his contentions that the disease is not due to any organic change and that the colon may be enormously dilated.

Blood Transfusion in Malnutrition and Infantile Atrophy.

J. D. LEEBRON (*New York Medical Journal and Medical Record*, March 7, 1923) presents a preliminary report on the use of blood transfusion in malnutrition and infantile atrophy. This method of treatment, if properly carried out, is practically devoid of danger and is productive of good results. The indications for its use are improper assimilation of food and secondary anæmias from any cause which results in malnutrition. It may also be used when collapse has been caused by circulatory depletion from such conditions as gastro-enteritis and when exhaustion has occurred in a patient the diagnosis of whose condition has not been established. Failure to obtain a satisfactory result may be due to the transfusion of too large an amount of blood. The author has found that a satisfactory standard was adopted when he used twenty cubic centimetres of blood to 0.9 kilogram of body weight. The most satisfactory route with infants is the superior longitudinal sinus. Administration must be made very slowly. The author has been accustomed to allow forty to sixty seconds for each cubic centimetre to enter the circulation of the patient. The author states that blood transfusion replenishes the circulation in a more stable manner than the intra-peritoneal injection of saline solutions. This may be due to the fact that saline infusion does not maintain blood volume for so long a period as blood transfusion. He refers to the work of Ashby and to her conclusion that the beneficial results of transfusion are not due primarily to a stimulating effect on the bone marrow but to the functionating of the transfused corpuscles. He also states that many observers do not agree with this statement and expresses agreement with Stengel that in the anæmias the hæmotopoietic function is stimulated by blood transfusion.

Early Fever of Infants and the Leucocyte Count.

IT has been claimed that the fever that often occurs during the first week of life of babies, is caused by a process of dehydration. H. Bakwin and R. M. Morris (*American Journal of Diseases of Children*, July, 1923) have carried out some studies with the object of ascertaining whether this assumption is based on fact. On the first day of life the leucocytes of afebrile infants numbered 20,000 and 25,000 per cubic millimetre. The number fell rapidly during the following days and reached the level regarded as normal for adults about the seventh day. At times there was noted a second rise during the second week to between 10,000 and 12,000 per cubic millimetre. Estimations made with the blood of febrile infants during the first days of life revealed daily variations closely corresponding to those of afebrile infants. When plotted in a curve with the leucocyte count in the ordinate and the body temperature in the abscissa, it was found that there was no relationship between the degree of fever and the number of leucocytes in each cubic centimetre of blood. The authors, therefore, conclude that the variations in the number of leucocytes are not caused by the concentration of the blood. Infants in the first weeks of life with fever have apparently the same leucocyte counts as infants without fever.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held in conjunction with the Section of Pædiatrics at the B.M.A. Building, Elizabeth Street, Sydney, on July 20, 1923, DR. ANDREW DAVIDSON, the VICE-PRESIDENT, in the chair.

Visitors.

The CHAIRMAN extended a welcome to Dr. F. S. Hone, Dr. W. N. Robertson, C.B.E., and Dr. H. S. Newland, C.B.E., D.S.O., who were visiting Sydney in connexion with the Federal Committee of the British Medical Association in Australia.

Tonsils and Adenoids.

DR. C. B. BLACKBURN, O.B.E., read a paper entitled "The Tonsils from the Point of View of the Physician" (see page 269).

DR. W. C. MANSFIELD read a paper entitled "The Treatment of Tonsils and Adenoids" (see page 269).

DR. W. VICKERS, D.S.O., read a paper entitled "Indications for Treatment of Tonsils and Adenoids" (see page 270).

DR. A. J. BRADY in opening the discussion demonstrated some instruments which he had used in the early days of his practice. The first guillotine had had the disadvantage that the ring was very thick and had been difficult to insert between the pillar and the tonsil. Dr. Brady had recognized this and had had another type of instrument made for him by Hentsch. This instrument resembled an O'Malley guillotine. It was, however, a cutting instrument; the O'Malley instrument was not one of the cutting type. In using the O'Malley instrument if the tonsil went into the ring in a manner somewhat similar to that experienced in reducing a hernia, the tonsil could be removed absolutely complete and clean. It was very like skinning a rabbit. At the present time they operated because of recurring tonsillitis and blocking of the tonsillar crypts. Sometimes a cure could be effected by cleaning out the crypts. He agreed with Dr. Blackburn's sane description of conditions requiring treatment. Dr. Mansfield had given a good description of the technique of tonsillectomy. He had not described the technique of removal of adenoids as fully as he could have done had he wished. Dr. Brady thought that every rhinologist saw naso-pharynges that had been badly damaged. He had seen patients in whom the Eustachian cushions had been amputated. The commonest damage was wounding the cushions and the roof of the naso-pharynx. These adhesions were the cause of most post-operative catarrh. He found that relief could often be obtained by putting in a curved knife and dividing the adhesions. The adenoid curette was wrongly so called. It was not a curette, but should be used as a knife. There was nothing more unsurgical than the continued pushing backwards and forwards of the instrument, particularly the one which had a cage attached. It was his practice to clean the grooves at the top of the naso-pharyngeal space with the gauze-covered finger. In this way the surgeon could be sure that the spaces were clean and no adhesions would form afterwards. Dr. Brady demonstrated the correct and the incorrect methods of holding the adenoid curette and said that the removal of adenoids was generally simple if the operator kept before him a mental picture of the space in which he was working. By doing this he would avoid wounding the cushions and would be able to clear the space above them.

DR. HERBERT W. J. MARKS said that the number of diseases which had been referred to that night as being caused by tonsillar infection, was really alarming. It might almost be thought that by removing the tonsils it would be possible to prevent or cure all the diseases to which flesh was heir. Dr. Blackburn and Dr. Vickers had referred to many diseases caused by tonsillar infection which had also come under his notice, such as cardiac, renal, arthritic, rheumatic or myositic trouble, which had cleared up after tonsillectomy. There were, however, one or two other conditions not mentioned in the papers to which he wished to refer. Commencing or early oto-sclerosis, an osteitis of the labyrinthine capsule, was sometimes caused by sepsis of tonsils, teeth or sinuses. He had seen some half-dozen patients whose deafness had been regarded as due to oto-sclerosis which had disappeared after removal of infected tonsils. He had also seen two patients in whom a similar trouble had existed which had cleared up after extraction of septic teeth. Other conditions to be considered were vertigo and tinnitus. In these the patient complained of attacks of giddiness and of a high pitched continuous hissing sound like escaping steam which in many instances was due to a neuritis of the vestibular or cochlear distribution of the eighth nerve originating from septic tonsils or teeth. Another condition was hyperthyreoidism and its relation to tonsillar infection. It had been stated that at the Mayo Clinic after thyreoidectomy had been performed to relieve symptoms, it was customary to remove infected tonsils to prevent a recurrence of hyperthyreoidism in the remaining lobe. In all the conditions that had been referred to, it was most necessary to go carefully into the question of focal infection.

The indications for operation had been pointed out clearly by Dr. Vickers. Dr. Marks then referred to children who were backward and mentally dull and whose general condition was poor. After removal of tonsils and adenoids the child brightened up wonderfully, the general condition improved in a remarkable manner in a very short time and the child became altogether a different being. He could not think that this was due solely to the removal of the obstruction and sepsis. It had probably something to do with the pituitary gland and its internal secretion. The result of the operation for the removal of adenoids in the roof of the naso-pharynx might be that lymphatic drainage which was interfered with or prevented from coming down from the hypophysis by the mass of adenoid tissue, would be released and re-established, so allowing the proper functionating of the pituitary gland. This was a theory which might be investigated.

In regard to the removal of tonsils, Dr. Marks advocated George Waugh's method of enucleation by dissection. He had not used a guillotine for ten years. He had given up using the guillotine because in all cases the tonsil could be entirely removed in its capsule by careful dissection without any bruising of the palate or any damage to the anterior or posterior pillars of the fauces. It was his custom to begin the dissection by freeing the posterior pillar. In this way vision was not obscured by blood when separating the mucous membrane from the delicate posterior pillar, as was often the case when the dissection was begun from above or from the anterior aspect. The mucous membrane should be carefully stripped away from the tonsil to expose the bluish capsule and also all vessels should be picked up before being cut and ligatured after removal of the tonsil.

In regard to anæsthesia he had always used the intra-tracheal method with older children and adults and the intra-pharyngeal with younger children. It was very convenient to work with a suction apparatus which kept the throat clean and dry and in the hands of a skilled assistant could be used as a retractor as well to the great advantage to the operator. These procedures prevented blood and septic material from entering the trachea and lungs. Such was not the case with the older methods of open or closed anæsthesia.

DR. W. N. ROBERTSON, C.B.E., said that he was delighted to have had the pleasure of listening to such sane and sensible papers. Diseases of the tonsils were debated more than any other diseases in the whole range of medicine and surgery. All sorts of arguments were used as to what should be done and how it ought to be done. A formidable list of diseases had been laid that night at the door of the tonsil, but they had not all been mentioned. Dr. Blackburn's attack on the tonsil had been most thoughtfully and carefully worked out. He would like to illustrate his remarks by quoting a few cases. He could recall

a boy, aged eleven years, a relative of his, who had been affected with rheumatism. The child, a sturdy little man, had been so crippled with rheumatism that he had hardly been able to walk upstairs. His tonsils had been septic and both tonsils and adenoids had been enlarged. Dr. Robertson said that he had removed both tonsils and adenoids, had kept the child for about an hour and then had sent him home in a car. The child had complained of a sore throat, but had remarked to his mother that all the pains were gone out of his legs. The pain had disappeared an hour after the operation and had not returned since. This made him wonder why the pain had disappeared so quickly. Was it possible that there was a constant stream of absorption going on from the tonsils? This case had been a revelation to him. In regard to goître, Dr. Robertson referred to a girl, aged fourteen years, whom he had shown at the Brisbane Congress. This girl had had an enormous goître. Her septic tonsils had been enucleated. Two weeks later it had just been possible to tell that her thyreoid gland had been enlarged. He had seen other cases of a similar nature. The teeth were very often to blame. It would be found that in young children with septic tonsils on whom it was not advisable to operate, improvement in the tonsillar condition would occur if the mouth was carefully cleaned out. Dr. Robertson referred to a doctor's wife, aged forty-six years, who had been brought to him. She had been very ill with what looked like a cardiac condition and her urine had contained albumin and casts. Her tonsils had been small, but he had found two crypts affected in one tonsil and one in the other. He had enucleated the tonsils. Three weeks later it had been impossible to find any abnormal conditions. He had experienced the result of a septic focus himself. He had had a lot of pain in an interphalangeal joint of one of his fingers. After searching for a cause he had found a tender tooth. After removal of the tooth the pain in the finger had disappeared. He was of the opinion that when the crypts got blocked more absorption occurred and more symptoms were caused. He had been interested to hear Dr. Marks refer to ear conditions. It was well to bear in mind the fact that disease of the tonsils had an effect on hearing and improvement often resulted in adults after tonsillectomy. It was said that with increasing age came more conservatism. He thought that in his younger days he had been too conservative. More tonsils were removed in modern times, but a definite indication must exist. Dr. Robertson recalled the history of a doctor's son, aged fourteen years, who had been a rude and sulky youth. He had always been at the bottom of his class. Six months after the removal of infected tonsils this boy had grown ten centimetres (four inches) and had been top of his class. Previously this boy had had a heavy load to carry. In regard to methods, he had seen some of the Sydney surgeons at work and admired their methods. He would stick to his own methods, however. He liked the guillotine. He made it a habit to "Sluder" every tonsil that he could. Much better end results were obtained than by dissection with local anæsthesia. He used an adenoid curette designed by Mackay Macdonald, a brother of Greville Macdonald, who had been a contemporary of Morrell McKenzie. It was a curette with a cage like the old Backmann type of instrument. It contained no hooks. The cage was not a cage, but a flap opposed to the cutting edge which left no tags. He generally used gas anæsthesia, sometimes chloride of ethyl and sometimes ether.

DR. F. S. HONE said that he would like to express his thankfulness for the opportunity of being present and of listening to such excellent and wise papers on a debatable subject. He could only speak from the point of view of the physician who often saw the surgeons at work. Dr. Blackburn had referred to two very important conditions, acute rheumatism and nephritis. It was easy to make out a list of diseases which were coincident with or subsequent to tonsillitis. The modern tendency was to say that almost any disease was due to infection, to go for the teeth and the tonsils and to make the round of all other organs which might be offending. Dr. Blackburn had shown his wisdom in confining his remarks to these two conditions, for the tonsils stood in causal relationship to them more frequently than to any other conditions. He might go further than this and state that a division could be drawn between acute rheumatism and the other manifestations of throat infections. In acute rheumatism he always looked to the throat; there was a definite relationship between the throat and that infection. It could so often be demonstrated by the results of local attention to the throat at the time. In acute nephritis, on the other hand, the infection was mainly tonsillar, but not always. In the other conditions mentioned it was only one amongst many possible sources of infection. He would not go so far as Dr. Blackburn and say that the tonsils should always be removed in acute rheumatism, but he thought that removal should be carried out after more than one attack. In the treatment of myositis local treatment applied to the tonsils would cut short an attack. In dealing with under-nourished children it was impossible to dissociate the tonsils from adenoids. It was hard to say in these cases how much of the improvement following on operation was due to the removal of tonsillar infection and how much was due to the removal of the obstruction to respiration. He thought that much of the improvement after operation was due to the fact that the children were able to get deeper sleep. This had been brought home to him in the early days of his practice when he had watched a sleeping child who was so affected. The child had continually awakened with a start and had been in the borderland of sleep. After operation this disability was removed and he felt that this was largely the cause of the improvement. There was another point to which no reference had been made, and that was the necessity for removal of obstruction in the front of the nose. It was not sufficient to confine the attention to the back of the nose and the throat.

DR. H. S. NEWLAND, C.B.E., D.S.O., said that he would like to join with Dr. Hone and Dr. Robertson in expressing his appreciation of the welcome and the hospitality that he had received. He appreciated the technique and admirable method of Dr. Mansfield and Dr. Marks. It appeared to him as a surgeon that ordinary surgical methods should be applied to the tonsils as to other organs. Bleeding vessels should be seized and ligated. This was the only way to secure freedom from hæmorrhage. When hæmorrhage did occur, the same precise surgical measures should be adopted. Styptics and pressure should not be applied. The patient should be anæsthetized again and the bleeding point ligated. The reason why tonsils could be removed with such ease was that the methods of anæsthesia had been improved. The surgeon could see what he was doing.

DR. HARVEY SUTTON, O.B.E., said that almost everything had been said by the other speakers. He expressed his appreciation at what he had heard. In regard to school children his department had proceeded with a certain amount of faith. In New South Wales one hundred thousand children were being examined each year and fifteen thousand were notified annually for nose and throat defects. From a preventive point of view they believed in teaching the use of the handkerchief. An attack was also being made on those infectious diseases which began in the nose and throat. They also believed in treating the teeth of children. There had been an improvement in school work as a result of the operative treatment of defects. In dealing, for instance, with children of thirteen years of age in from the fourth class to high school standard the proportion of children who had been operated on, was higher in children who had reached the high schools. It was obvious that the child was able to make progress because the handicap had been removed. Dr. Sutton referred to some observations that he had made in the nutrition of children in connexion with an open air school. It had been found on examination that about twenty children had not made progress equivalent to that of the others. These twenty had all had adenoids. After removal of the adenoids it had been found that they picked up within a period of six months and became equal to the other children. He wished to supplement Dr. Hone's remarks in regard to the effect of disturbed sleep. Restlessness, sleep-walking, sleep-talking, night terrors and nocturnal enuresis were largely due to the lack of proper sleep. The children arrived at school "dopey" and suffered from aprosexia. It was not to be expected that a child

would make progress if it had a bad night every night in every month of the year. He wished to lay emphasis on the necessity for the adoption of one standard in regard to these operative procedures. It should be recognized that no treatment was complete until proper nasal respiration was established. Unless this was done the children would often appear a year later with obvious nasal obstruction. He also hoped that it would be possible to get rid of the statement that the children would "grow out of it." It was true that this might occur at the time of puberty, but what a spectacle the child would present at that time, with deformed facies, perhaps permanently deaf, being below standard in height and weight and retarded two years at school. In reference to oto-sclerosis he wished to refer to a girl who had been seen at a primary school and subsequently at a high school. She had been told repeatedly by a doctor that she would "grow out of it." On coming to the Teachers' College she had been sent to a specialist. It had then been found that a permanent oto-sclerosis was present. The broad-casting of the meeting that night might do good. The opinion of medical practitioners in regard to tonsillar conditions was chaotic. Sometimes men would not entertain the suggestion of operation and sometimes quite the reverse was the case. It was about time that the golden mean was found.

DR. R. S. GODSALL referred to two points which had not been mentioned by previous speakers in helping to distinguish a diseased tonsil. One was the presence of enlarged glands in the triangles of the neck. In many children it was difficult to determine whether the tonsils were diseased or not. They might be squeezed and possibly no secretion might be obtained from the tonsillar crypts. In these circumstances if the crypts were enlarged, the patient could be sent away for one month on general treatment. If after that time the glands were still enlarged operation might be recommended. Secondly in adults often the only constant sign was persistent injection of the anterior pillar of the fauces.

DR. GARNET HALLORAN said that he was in accord with the methods of removal by dissection under brilliant illumination. In regard to anæsthesia he had altered his views a little. He had formerly used the intra-tracheal method of inducing anæsthesia in adults, but he really doubted if it were much more satisfactory than anæsthesia given by the intra-pharyngeal method, provided that the suction apparatus were efficient. After using local anæsthesia for eighteen months at the Randwick Hospital he had given it up except in a small restricted class of case. He had usually used "Apothesine" and occasionally "Novocain." The operation was certainly bloodless with this form of local anæstheia, but there was increased tendency to post-operative reactionary hæmorrhage. If a local anæsthesia were used, he was of the opinion that the adrenalin should be left out. A reaction occurred after the patient got back to bed which combined with the patient's recumbent position promoted hæmorrhage. In regard to post-nasal catarrh he thought that little more was known of the condition than had been known forty years previously. After a too zealous scraping of the post-nasal space with the adenoid curette healthy mucosa was often removed and the consequent scarring and loss of healthy mucosa possibly accounted for a percentage of catarrhal conditions. If this were so, it would be better to leave healthy masses *in situ* unles these were causing symptoms. In regard to the tonsil guillotine, he was of the opinion that in a large number of patients the lingual prolongation of the tonsil could not be thoroughly removed with this instrument. Such patients were then likely to develope chronic suppurating tonsil stumps.

DR. R. SCOT SKIRVING said that he had tinkered somewhat with both medicine and surgery and therefore could, perhaps, see both points of view. Dr. Blackburn had opened the discussion with what had been correctly described as a sane paper. There was nothing in it with which he could not agree and commend. In regard to the acute and aberrant forms of rheumatism no one could doubt that the tonsil was one of the foci from which systemic effects were produced. He was not certain that they were on such sure ground with regard to nephritis. The tonsil, he thought, *per se* did not stand with the same certainty in causal relation to this condition. He had had considerable experience of cyclic albuminuria. He did not know what caused the leakage of albumin in the large number of people thus affected. It was, however, a fact that these albuminurias had cleared up quickly in a number of persons after tonsillectomy. In regard to the question of operation he agreed with the readers of the papers. He disagreed, however, with the statement that removal should not be carried out for bigness alone. They were too prone to rush to foci of absorption to explain general symptoms. The focal theory like many others was run sometimes to death. Mechanical defects undoubtedly played at times a great part in the symptom complex. He agreed that one of the reasons for post-operative improvement was ability to sleep. Another point had been whispered to him by Dr. Marks and this had been emphasized by Starling, namely that enlargement of the tonsils and adenoids interfered with proper pulmonary ventilation. Dr. Marks had brought forward the question of the pituitary gland. The point was suggestive. There might be something in it. In this connexion when mechanical conditions and focal infection were absent it was necessary to hunt for something else. When he had begun practice there were two operations that had been the stock pot of the general practitioner. These were curetting and the removal of tonsils and adenoids. He had thought in those days that the successful removal of tonsils was no mean achievement. With the meticulous care now used and the wider scope of the operation and the newer apparatus used in connexion with it, it would appear that the operation of tonsillectomy had been removed from the stock pot of the general practitioner and belonged to the men whom he saw before him and who were more fully competent to undertake its performance.

DR. J. MACDONALD GILL, the President of the Section of Pædiatrics, drew the attention of those present to its activities. Two more meetings were to be held during 1923. Any member of the Branch was eligible for membership.

DR. ANDREW DAVIDSON in thanking the readers of papers said that it had been an honour to preside over the meeting. The papers and the discussion had been very valuable. He agreed with Dr. Sutton that the publication of the proceedings would be a great help.

DR. MANSFIELD in his reply uttered a note of warning in regard to the use of of suction apparatus and intra-tracheal anæsthetic apparatus. It was physiologically wrong to use an apparatus in which the blower for vaporizing the ether was at the same time used as a sucker, thus creating a vicious circle where the air coming through the suction tube was passed over the ether to the patient. The blower and suction apparatus should be two separate machines.

DR. BLACKBURN AND DR. VICKERS also briefly replied.

NOMINATIONS AND ELECTIONS.

THE undermentioned has been nominated for election as a member of the New South Wales Branch of the British Medical Association:

HOPE, ELSIE JOAN, M.B., 1922 (Univ. Sydney), Holborrow Street, Croydon.

THE undermentioned has been elected a member of the Queensland Branch of the British Medical Association:

PATERSON, NORMAN ROY, M.B., 1921 (Univ. Sydney), Normanton.

NOTICES.

THE COUNCIL OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION has arranged the following provisional programme of the Branch meetings. The Scientific Committee reserves to itself the right to modify the arrangement, but it is hoped that no changes will be necessary.

October 3, 1923.

CLINICAL MEETING at St. Vincent's Hospital.

Correspondence.

SPIRITUAL HEALING.

SIR: My attention has been called to a report in *The Church Gazette*, published in Auckland, of the case of a Nurse Hemsworth said to have been cured by Mr. Hickson of glaucoma and in which my name figures freely. I need hardly say that my permission was not asked.

The facts, as might be expected, are hopelessly garbled. This patient never had glaucoma, but six years ago had recurrent attacks of iritis with glaucomatous tension, due to secluded pupils. An iridectomy was done in the right for the relief of this and as the inflammatory condition subsided, the glaucomatous element in her eyes disappeared. My last record of her vision six years ago is: Right less than 6/60, left normal (6/6), field entire and no scotoma.

She came in to see me about a month ago, and her condition was precisely the same, except that the vision of the right was, as would be expected after that lapse of time, somewhat better. I have not kept a record of this visit.

Her dramatic account of the interview is, of course, pure romance. The only acurate statement that I can recognize is my opinion of Hickson.

On such "facts" are these "cures" of organic disease based.

Yours, etc.,

E. TEMPLE SMITH.

185, Macquarie Street, Sydney,
September 6, 1923.

DISEASES OF AUSTRALIAN ABORIGINES.

SIR: The Australian aboriginal is rapidly dying out. Very few records of the course of disease and of pathological changes in this race have hitherto been recorded. The reactions that occur are of considerable interest on account of the long isolation of these people from the rest of mankind. Since the coming of the white man they have been subject to many infective diseases to which they had previously not been exposed. Consequently no acquired racial immunity to such diseases should be present.

For some years I have been collecting records of the occurrence of disease among them. Recently through the kindness of various friends and correspondents I have received a large amount of very valuable information. I propose to submit this information to the Medical Congress in November. There are probably many who can assist me with further data on the subject. I am especially anxious to obtain any records of individual cases of disease. Very few examples of malignant growths have been met with and I have no information as to the occurrence of acute or chronic nephritis. Perhaps some may be able to supply information on these heads. The reactions manifested by the natives to the ordinary infectious diseases are also of great interest. Any data supplied will be suitably acknowledged.

Yours, etc.,

J. B. CLELAND.

Department of Pathology,
University of Adelaide,
August 29, 1923.

THE PRICE OF "INSULIN."

THE Commonwealth Serum Laboratories announce that the price of "Insulin" has been reduced. The price originally charged was 4 2/3d. per clinical unit. It has been possible, as the experimental processes are gradually replaced by large scale manufacture, to reduce the cost of "Insulin"; consequently 3d. per clinical unit will be charged until further notice. This corresponds with the British price operating in July. As the manufacture of "Insulin" becomes more extensive, the price will again be reduced and, although production was begun both in England and in the United States of America months before it was taken up in Australia, it is hoped that the increased production will in a very short time enable the agent to be sold as cheaply here as in England. Supplies are now becoming abundant and applications from physicians who are able to comply with the necessary conditions already published in THE MEDICAL JOURNAL OF AUSTRALIA, should be forwarded at once to the Commonwealth Serum Laboratories.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

A MEETING of the Senate of the University of Sydney was held on August 13, 1923. It was decided to forward letters of sympathy to the families of the late Dr. G. E. Rennie and the late Judge Docker.

The Warden reported that he had received a cable from Professor Read, who is at present in England, resigning his position as Professor of Organic Chemistry, as he had accepted another appointment at the University of St. Andrews, Scotland.

The Senate granted the Australian National Research Council permission to use the Great Hall of the University for the purpose of holding a conversazione on Thursday, August 30, in connexion with the Pan-Pacific Congress to be held in Sydney from August 23 to September 3, 1923.

Dr. Keith Inglis was on the recommendation of Professor Welsh reappointed as Demonstrator in Pathology for a further period of twelve months.

Dr. R. B. P. Monson was appointed Honorary Demonstrator in Anatomy.

The following examiners were appointed for the conduct of the final degree examination in the Faculty of Medicine:

Medicine: PROFESSOR A. E. MILLS, DR. CECIL PURSER, DR. S. A. SMITH.

Surgery: PROFESSOR F. P. SANDES, DR. H. S. STACEY AND DR. R. B. WADE.

Obstetrics: DR. J. C. WINDEYER, DR. S. H. MACCULLOCH.

Gynæcology: DR. FOURNESS BARRINGTON, DR. G. ARMSTRONG.

Clinical Medicine: DR. C. B. BLACKBURN, DR. J. M. GILL, DR. SINCLAIR GILLIES, DR. H. J. RITCHIE.

Clinical Surgery: DR. G. H. ABBOTT, DR. C. E. CORLETTE, DR. GORDON CRAIG, DR. A. ASPINALL.

DRS. J. L. MCKELVEY, C. E. CORLETTE AND A. ASPINALL were appointed additional examiners for the fourth degree examination in the subjects of operative surgery and surgical anatomy.

A communication was received from Dr. J. L. McKelvey resigning his position as Tutor in Surgery at the Royal Prince Alfred Hospital. On the recommendation of Professor Sandes the arrangements of Tutors in Surgery were referred to the Faculty of Medicine.

A meeting of the Senate of the University was held on September 3, 1923.

A letter was received from the British Medical Association announcing the visit of Sir William Macewen, C.B., F.R.S., LL.D., M.D., F.R.C.S., D.Sc., D.C.L., Regius Professor of Surgery in the University of Glasgow. Arrangements for the visit were left in the hands of the Vice-Chancellor and the Dean of the Faculty of Medicine.

A letter from Dr. P. C. Charlton, Honorary Secretary of the Society of Dental Science suggesting the establishment of a Department of Dental Research was referred to the Faculty of Dentistry for report.

A letter was received from the Union Trustee Company forwarding a cheque for £5,000, the bequest of the late Miss Elizabeth R. Caird for the establishment of scholarships.

A communication from Mr. F. C. Moore drawing attention to the fact that a special home for the care and relief of people suffering from cancer is being built by the Committee of the New South Wales House for Incurable, was referred to the University Committee of Direction on Cancer Research.

Naval and Military.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, No. 58, of August 30, 1923:

Australian Military Forces.

FIRST MILITARY DISTRICT.

Australian Army Medical Corps.

To be Captain (provisionally)—KENNETH BARRON FRASER, 1st August, 1923.

SECOND MILITARY DISTRICT.

Australian Army Medical Corps.

LIEUTENANT-COLONEL A. J. MACKENZIE is restored to the authorized establishment of Lieutenant-Colonels, 1st July, 1923; the resignation of CAPTAIN L. MAY, D.S.O., M.C., of his commission is accepted, 16th July, 1923.

Reserve of Officers.

To be Captain—HONORARY CAPTAIN JAMES GRAY, from the Australian Army Medical Corps Reserve, 1st January, 1920.

THIRD MILITARY DISTRICT.

Australian Army Medical Corps.

CAPTAIN A. W. NANKERVIS is transferred to the Unattached List, 1st July, 1923.

Australian Army Medical Corps Reserve.

To be Honorary Lieutenant—ERIC MENDEL ETTELSON, 1st July, 1923.

Proceedings of the Australian Medical Boards.

TASMANIA.

THE undermentioned has been registered, under the provisions of *The Medical Act, 1918*, as a duly qualified medical practitioner:

SUTTON, GEORGE, M.B., 1904 (Univ. Melbourne), Hobart.

Medical Appointments.

DR. H. A. ANNETTS (B.M.A.) and DR. J. Z. HUIE (B.M.A.) have been appointed Government Medical Officers at Hillston and at Peak Hill, respectively, in New South Wales.

* * * *

DR. C. O. HELLSTROM (B.M.A.) has been gazetted an "Appointed Member" of the Licensing Court for the Licensing District of Mitchell, New South Wales.

* * * *

DR. F. L. UTBER (B.M.A.) has been authorized by the Board of Health of New South Wales as an Inspector, at Cooma, under the *Cattle Slaughtering and Diseased Animals and Meat Act, 1902*.

* * * *

DR. C. T. ABBOTT (B.M.A.) has been appointed Public Vaccinator and Shire Health Officer at Cowes, Phillip Island, Victoria.

* * * *

DR. F. HOWSON (B.M.A.) has been appointed Medical Officer to the Adavale District Hospital and Medical Officer to the Adavale Shire Council, Queensland.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney	Australian Natives' Association Ashfield and District Friendly Societies' Dispensary Balmain United Friendly Societies' Dispensary Friendly Society Lodges at Casino Leichhardt and Petersham Dispensary Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney Marrickville United Friendly Societies' Dispensary North Sydney United Friendly Societies People's Prudential Benefit Society Phœnix Mutual Provident Society
VICTORIA: Honorary Secretary, Medical Society Hall, East Melbourne	All Institutes or Medical Dispensaries Australian Prudential Association Proprietary, Limited Mutual National Provident Club National Provident Association
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane	Brisbane United Friendly Society Institute Stannary Hills Hospital
SOUTH AUSTRALIA: Honorary Secretary, 12, North Terrace, Adelaide	Contract Practice Appointments at Renmark Contract Practice Appointments in South Australia
WESTERN AUSTRALIA: Honorary Secretary, Saint George's Terrace, Perth	All Contract Practice Appointments in Western Australia
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington	Friendly Society Lodges, Wellington, New Zealand

Diary for the Month.

SEP. 18.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
SEP. 19.—Victorian Branch, B.M.A.: Council.
SEP. 19.—Western Australian Branch, B.M.A.: Branch.
SEP. 19.—South Sydney Medical Association, New South Wales.
SEP. 21.—Eastern Suburbs Medical Association, New South Wales.
SEP. 25.—New South Wales Branch, B.M.A.: Medical Politics Committee; Organization and Science Committee.
SEP. 26.—Western Medical Association (Parkes), New South Wales.
SEP. 27.—South Australian Branch, B.M.A.: Branch.
SEP. 27.—Brisbane Hospital for Sick Children: Clinical Meeting.
SEP. 28.—New South Wales Branch, B.M.A.: Branch; Election of two members of Federal Committee.
SEP. 28.—Queensland Branch, B.M.A.: Council.
SEP. 30.—Victorian Branch, B.M.A.: Election of two members to Federal Committee.
OCT. 1.—Victorian Branch, B.M.A.: Election of Representatives of Divisions.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, B.M.A. Building, 30-34, Elizabeth Street, Sydney. (Telephone: B. 4635.)

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